Comparative education

4th major chemistry, biology & math

CONTENT

CHAPTER 1.

DEFINITION AND PURPOSE OF COMPARATIVE EDUCATION

DEFINING COMPARATIVE EDUCATION, the history of comparative education can be traced from the earliest times of human history. For example, prehistoric human differentiated between the two genders i.e. between man and woman. In order for the human to improve his/her life comparison has been an important aspect in their life. In political settings, leaders have been inspired to yield equal or more power and authority in comparison to their neighbors. In education circles reformers and educationists have been comparing their system with that found in other countries in order to improve their own. In line with this thinking, then what is comparative education? Comparative education is a fully established academic field of study that examines education in one country (or group of countries) by using data and insights drawn from the practices and situation in another country, or countries. Programs and courses in comparative education are offered in many universities throughout the world, and relevant studies are regularly published in scholarly journals such as Comparative Education, International Review of Education, International Journal of Educational Development, and Comparative Education Review. The field of comparative education is supported by many projects associated with UNESCO and the national education ministries of various nations. Comparative education has been defined in

different ways by various authors but what is common in the definitions is the emphasis on the use of data from another educational system.

Getao (1996) defined Comparative Education as a discipline, the study of educational systems in which one seeks to understand the similarities and differences among educational systems.

Noah and Eckstein (1969) defined comparative education as follows: Comparative Education is potentially more than a collection of data and perspectives from social science applied to education in different countries. Neither the topic of education nor the cross-national dimension is central to any of the social sciences; nor are the social science concerns and the cross-national dimension central to the works of educators. The field of comparative education is best defined as an intersection of the social sciences, education and cross-national study.

On the other hand, Sodhi (2006) has quoted various definitions as put forward by renowned comparativists, taking another angle than the above comparativists, who either defines Comparative Education as focusing on various education systems, such as Getao or as a interdisciplinary social science, such as Noah and Eckstein.

This angle depart from the premise first formulated sir Michael Sandler (1861-1943).

In a well-known lecture which de delivered in 1900, he contended that in studying foreign system of education it should not be forgotten that things outside the school matter even more than things inside; and that an education system is the. Outcome of (societal) forces which have been operated over an extended period of time. Thus, he opened a new way of conceptualizing Comparative Education and foreign education systems, namely as the outcome of societal or contextual forces.

Isaac Kandel (1881-1965) took up Sanders view that comparative education should not emphasize only educational set up, organization, administration, methods, curriculum and teaching but also the causes 2 behind educational problems of different countries and attempted solutions in the light of their social, political, cultural and national ideologies. It is not sufficient to know that education systems are different than one's own education system. It must explain as to why this difference is there. He believed in the theory of causation. This shaping factor of national education systems, he called "national character". The national character of a country shapes its education system. In order to understand a particular national education system, it is necessary to turn to the national character of the particular nation in question. For example, in order to understand the Japanese education system, it is necessary first to study the Japanese national character, as that has shaped the Japanese education system. Kandel explains this approach of his elaborately in his book Studies in Comparative Education, which was for many years the standard text of Comparative Education.

Together with Julien, Kandel is commonly called the "father of Comparative Education". In his book, Comparative Education: A Study of Educational Factors and Traditions, Nicholas Hans (1888-1969) arrived at the following classification of three groups of factors influencing the educational development in countries: i. Natural factors: race, environment and language ii. Religious factors: Catholicism, Anglicanism and Protestantism iii. Secular factors: Humanism, Socialism and Nationalism. The operation of these factors he illustrates in his book with the examples of England, USA, France and USSR.

Vernon Mallinson agrees with Hans and Kandel about comparative education, laying emphasis on the societal contextual factors shaping education systems. To him comparative education means a systematic examination of other cultures and

other systems of education deriving from these cultures in order to discover resemblances and differences and why variant solutions have been attempted to problems that are common to al/.

George Bereday (1920-1983) has emphasized the importance of methodology Comparative Education, through which lessons (for 3 improving the own, home education system) could be deduced from the variations in educational practices in different societies. In his classic book, Comparative Method in Education (1964) he describes Comparative Education as making sense out of the similarities and differences among educational systems. It catalogues educational methods across national frontiers and in this catalogue each country appears as one variant of the total store of mankind's educational experiences.

OBJECTIVES AND SCOPE According to Harold J Noah and Max Eckstein (1993), Comparative Education has four purposes:

• To describe educational systems, processes, or outcomes.

• To assist in the development of educational institutions and practices. • To highlight the relationships between education and society.

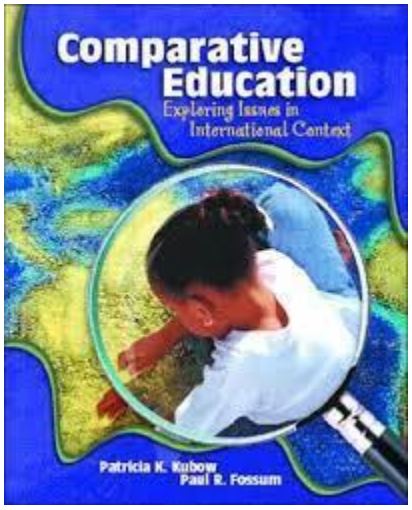
• To establish generalized statements about education those are valid in more than one country.

PURPOSE OF STUDYING COMPARATIVE EDUCATION There are various reasons why Comparative Education should be studied by prospective teachers and reformers of education in any country of the world. The reasons are:

• Description The most basic utility of comparative education is to describe education systems/learning communities, within their social context, in order to satisfy the yearning for knowledge which is part of human nature. The most basic utility of Comparative Education is to describe education systems within their societal contexts in order to satisfy the yearning for knowledge which is part of human nature. Bereday (1964: 5) puts it that: "The foremost justification for Comparative Education is intellectual. [Humans] study Comparative Education because they want to know".

• Understanding/Interpreting/Explaining On the next level Comparative Education also satisfies the need to understand: education systems are explained or understood from surrounding contextual forces which shape them. Conversely if education systems are also shaped by the societal matrix in which they are embedded (and if education systems, in turn, shape societies and cultures) then the comparative study of education systems also fosters an understanding of cultures or societies. Noah's (1986) thesis of "education as the touch stone of society" is very topical here. In this respect the value of Comparative Education is very topical in times of multicultural societies and of Intercultural Education. • Evaluation Comparative education serves the purpose of evaluating education systems: the own education system as well as universal evaluation of education systems. In the current age of competitive globalized world, the evaluation of the domestic 7 education projects assumes even bigger importance-hence the proliferation of studies such as the PISA (International Programmed for the

Assessment of Student Achievement) and IEA (international Educational Assessment) studies, and the international ranking of the universities. The universal evaluation entails how well the education systems of the world rise up to the challenges of the twenty first century world as well as an estimation of the limits and possibilities of the societal effects of education.



• Intellectual Comparative education is an intellectual activity that scholars can pursue to the highest level possible in the academic ladder. They can pursue it in their masters and doctoral programmers. An individual can do this in order to enhance his/her intellectual capacity concerning other systems of education with the purpose of enlighten. This knowledge would help the individual to understand their education system better and that of others with the intention of improving and solving problem in their own system. Knowledge for its own sake is the sole ground upon which comparative education need to make a stand in order to merit inclusion among other academic fields.

• Planning Modern societies have come to appreciate the importance of planning. Various problems that are associated with over-population, under production, diseases, economic nonviability, industrialization and social ills can be tackled through planning. Planning requires careful formulation of objectives,

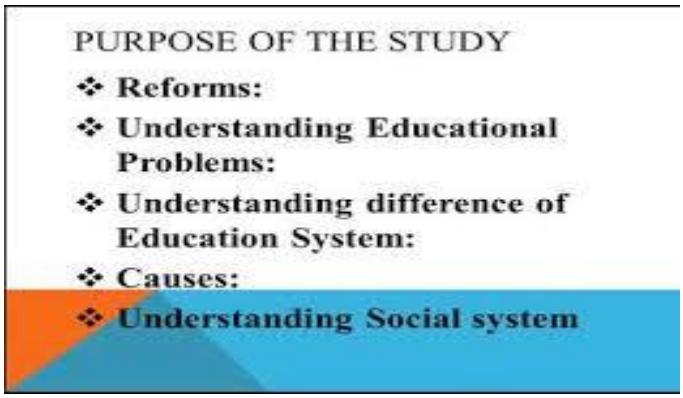
establishment of priorities and the identification of the means to achieve those objectives. Since an educational policy affects millions of people, rational decisions need to be made so that the policy can achieve the desired results. Comparative education is also pursued to design anew education system, to plan education, and to reform education systems (Steyn and Wolhuter 2010). In reforming or improving the education system or in grappling with an educational issue, challenge or problem, one country could benefit from the experience of other countries that once had faced the same problem, could reveal the full extent and implication of the problem and possible contributory causes; and could also suggest possible solutions to the problem. This call for proper planning that comparative education can provide a helping hand.

• Practicability We are living in a practical age in which education is regarded as a consumer good. The pattern of education, which loses its practicability, goes on being replaced by such patterns, which have practical utility. Those patterns of education that have no practical utility are being reformed. For example, in United Kingdom the state supported primary schools whose objectives was to teach the masses how to read and write, so as to enable them work better in the industrial society. These systems have survived with modification and improvements. In the former USSR and China work experience was emphasized and was very much reflected in the curriculum. In United States of America, comprehensive schools on the principle of utility and practicability have replaced grammar schools. In Kenya the education system was reformed in 1985 with a view to make it more practical. There were various arguments that had shown that the education system was more elitist and had no practical utility to the pupils involved. The problem of reforming an education system to make it more practical and of utility must be studied for solutions and this can be done better through the study of comparative education.

More over, recently there have appeared a number of publications proclaiming the value of Comparative Education in assisting the teachers to improve his/her teaching practice. Comparative Education can assess the track record of particular teaching methods in particular contents. Not the least significance is the value of assisting to improve teaching practice in multicultural classrooms.

• Humanitarian viewpoint The original inspiration source of the scholarly field of Comparative Education, the philanthropic ideal of the time of Jullien (1775-1848) remains the most noble cause in comparative education. Serving and improving the state of humanity is in the current age of globalization more urgent than ever by nurturing a global citizen, equipped with a creative, critical and caring mind set. The current world is characterized by increasing problems that are affecting the human population in various ways. Many parts of the world are or have recently been affected by wars, such as Iraq, Togo, Liberia, Sierra Leone, Durfur region in Sudan and Democratic Republic of Congo. The problems experienced in these countries do affect their neigh9 bours and other countries of the world in various ways. For example the Gulf War of 1991 affected the world oil prices just as had happened in 1971 during the crisis in the Middle East. This episode was later repeated during the war between the United States of America and Iraq in 2003. Since the Universal Declaration of Human Right by the United Nations assembly in 1948; people have aspired for peace, freedom, equality and a better life. Education has been highlighted as a human right and need to be accessed to all irrespective of age. Most of the countries in the world are aspiring to provide education to their masses. Countries like Kenya, Nigeria and Uganda are providing universal primary education. However, the economic and social implication of providing education to the masses is not well known. Nations need to co-operate in

order to create better world. Therefore, the knowledge of each other education system is necessary and can better be acquired through comparative education.



• Education problems in world perspective Most countries of the world have identical problems in their educational perspective. Therefore, it is possible for them to learn lessons from each other on how they resolved a particular problem. For example when Kenya was implementing her free primary education in 2003, Nigeria could have provided some of the clues of the problems, which were to be expected, and the solutions to them. Uganda, a close neighbour to Kenya also implemented her universal primary education earlier and she could have provided Kenya with practical solutions on how she managed her problems. Other lessons could have been learnt from Cuba on how she managed to obtain total literacy while India has problems in achieving it. These countries can provide important lessons to Kenya during her implementation of free primary education. Also, one would want to know how nations have struggled to establish media of instruction. The comparative approach would yield a deeper understanding of educational problems and their solutions. In this era, the purpose of Comparative Education would be better understanding of the changed circumstances and to have better equipment's to fulfil the new responsibilities. This will help in understanding of why some countries education systems are , 10 progressive while others are backward. The administrative system of the land influences the state of the

educational system. For example the administrative machineries of Switzerland, Canada, U.S.A. and Japan are combined with local autonomy and decentralized control. Consequently, in the educational system of these countries, we find a reflection of their political philosophy. Thus the political philosophy and administrative systems of various countries determine the administration and control of education.

• Innovation in education There are many innovations, which are being introduced to education today. The development of technology has facilitated new methods of organizing learning. For example the use of Radio and Television to deliver knowledge, use of other aspects of the media, Open University, African Virtual University (AVU) and computer assisted distance learning has been introduced to education. All these have facilitated education in a comparative context. The U.S.A. system has facilitated the spread of innovations in education in the world. In most of the developing countries distance education with the use of computer assisted learning is viewed as the panacea of educational access and the associated problems. In this regard the main problem to scarcity of qualified teachers in most of the developing countries would be whether the new technology would replacethe real teachers in the classroom settings.

• Economics of education Much of the massive expansion in the provision of education since the middle of the twentieth century took place on the basis of the belief that the provision of education results in economic growth and increased economic productivity. In the recent year's research has generated the realization that the spread of education is positively correlated with increasing productivity. For example the former U.S.S.R. set out to improve her economy by taking as a first step

the eradication of illiteracy. Also, all the developed countries have progressed by investing more in education. On the other hand most of the developing countries have generated the problem of educated unemployment or brain drain by improving their education systems. The belief inthe value of education as instrumentto effect economic growth took off in the second half of the twentieth 11 century. This belief was spurred by the publication of a book and the formulation of a new theory. F.Harbison and C.A.Myer published their book Education, Manpower and Economic Growth in 1964. This book was based on a correlation between educational enrolment ratios and the level of economic development of 75 countries in the world. In 1961. Theodor W. Schultz, in his presidential address to the American Association of Economists, explained his theory of human capital. This theory, for which he was awarded the Nobel Prize for Economics in 1979, saw education as a productive investment, and no longer as a consumption item as it has been seen in history up to that point in time. This theory resulted in a revolution in Economic thought and in thought in Education alike (cf. Sobel. 1982). While the subsequent experience of more than half a century of educational expansion has proved this belief in the economic returns to educational investment very naive and simplistic, and economic expansion should not be the only reason for the provision and expansion of education; much of the expansion, in education worldwide takes place in the belief that education will effect economic growth, and

can countries learn a lot from each other regarding the use of education to effect economic growth.

• Education for international understanding. International understanding is a central purpose for studying comparative education. The two world wars made man to seek even more seriously the various ways of promoting international understanding. United Nations Educational Scientific and Cultural Organization (UNESCO) have recognized that wars begin from the minds of men. Therefore, in order to stop another war from occurring international understanding is essential so that national pride can be curtailed in the people's minds. This was the spirit of the League of Nations in 1921; International Bureau of Education in 1925 and Commission of Intellectual Cooperation in 1926. To deal with labour problems and education, International Labour Organization (ILO) and United Nations Educational, Scientific and Cultural Organization (UNESCO) have been established. The declaration of human rights by United Nations Organization (UNO) as a way of enhancing peace has contributed to international understanding. Unilateral and multilateral co-operation programs 12 have been developed to promote international understanding. Education is seen as the possible way to enhance international understanding. To understand other nations of the world, their philosophies of life, education, culture and sociology and to understand the forces, be they geographical, cultural, local and religious influencing their life, to know more about their customs, traditions and culture is absolutely essential. An understanding of how these cultures are affecting education systems, and how these cultures are shaped by education is important for the development of clear concept of internationalism. Exchanging students, teachers and other social workers is intended to promote the international systems of education.

• Relax national pride This is necessary for combat feelings of superioriority, especially among, the populations of countries technologically and economically developed and with military prowess. They need to understand that other countries are essential for their sustenance and therefore have to work for mutual benefit of each other. As Kubow and Fossum (2007), comparative thinking and international perspectives taking are essential for citizens to get along in diverse, global society. Comparison challenges students to suspend judgment of these foreign systems that they might base on their limited and localized perspectives. Through the development of comparative thinking skills, students should be able to undertake analyses of their home cultures and systems with a more nuanced understanding of various cultural factors at play. Comparative education also encourages students and educators to ask, "What kinds of educational policy, planning, and teaching are appropriate for what kind of society?" The field of Comparative Education focuses our attention on what might be the appropriate and inappropriate policy, while fostering awareness of the ideologies underlying educational practice. Hence, comparative study can also cultivate a political consciousness.

Quizzes:

1) Write the meaning of comparative education.
2) What are purposes of studying comparative education?

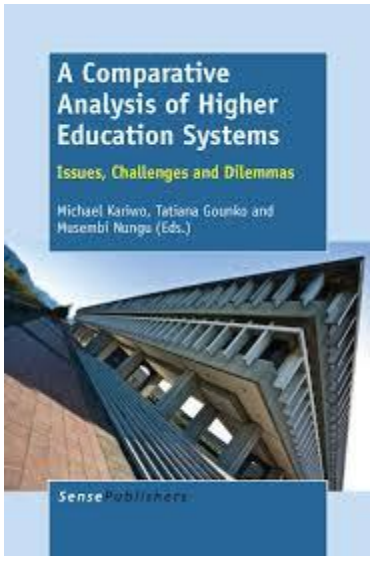
Chapter 2

Challenges facing the Study of Comparative Education

https://www.youtube.com/watch?v=RpnLCsZ_eSs

i) Challenge of Definition;

The first challenge relate to the definition of comparative education as an area of study. As noted earlier various scholars define comparative education differently depending on their orientation. One big challenge among the scholars in relation to defining comparative education has been whether it should be defined by its content or method. Indeed to date scholars are still divided on whether comparative education is a field of study or just a method of researching on educational issues. In many universities in the developing world, the subject is seen just as a subset of history of education or sociology of education and is often taught by educational historians or sociologists. However the University of Nairobi has endeavored to train comparative educationist of which the author of this book is the first graduate. Other students are currently studying comparative education at the post graduate level and with time there will be scholars of comparative education trained in Africa. It is worth noting that, today many universities in Africa are offering comparative education as a core unit in graduate teacher education training as recognition of the fact that comparative education is a discipline in its own right, whether defined from the point of view of its content or its method.



ii) Challenge of Comparability

Most issues in comparative education are linked to the social, cultural, political, and economic realities of particular countries. These are further related to issues like equal opportunity, curriculum relevance among other issues which are all interpreted differently in different cultures and educational systems. In consideration of these different interpretations it becomes tricky and sometimes misleading affair to make comparisons of educational system and issues across national boundaries. For an effective comparison to be made, it calls for an understanding of all the parameters to be considered in comparison to have where possible one meaning and interpretation. This is only possible if one understands the various cultural and social contexts of the educational system.

iii) The challenge related to Method.

Over the years, some of the analytical tools used in the study of comparative education have been in most cases considered to be primitive as compared with the tools currently being used in other social inquires. For example, the use of questionnaires sent through post office prove to be unsatisfactory in that unreliable data is likely to be provided because of different interpretation given do different

levels of education and the understanding of the purpose for which the data are collected. In other instance some of the social inquiries are difficult to use because of time and expanses involved. Also in comparative education different issues require unique methods to address them. As is with other social sciences, each study will require a specific method of study and as such comparative education faces the challenge of choice of method of approach in addressing educational issues and process being studied. A scholar in comparative education has a wide variety of methods from which to choose from and making the right choice often proves to be a big challenge in the study of comparative education.

iv) Challenge related to Subjectivity of Analysis.

In many studies, there is a human tendency to view issues with ones social background. Since we all come from various social backgrounds, some from the primitive, conservative and sometimes rigid, while others come from the modern, open minded and move receptive to changes. The social background brings with itself divergent views that are of comparative nature. As such, when people are not natives of the countries where the study is being taken, they tend to have biases and this poses challenges in comparative education since it results in subjectivity

of analysis of the educational issues. All studies ought to be objective rather than subjective for that is the essence of every study even in comparative education.

v) Challenge related to Culture and Language.

Quite often than not, ones social background is greatly influenced by ones culture and language. Every country or regional of the world has its own culture and language. These in themselves pose as challenges in comparative education study since there is always a need for fresh studies as one moves from one cultural language group to another. In order for one to have a very good understanding of the issue of study, it will require him or her to employ a thorough examination of the terminology to be employed and used in the study. This is because any terminology used need to be clear to make the study meaningful and useful to the stake holders. Any ambiguity of terminologies may render the study useless and meaningless. Clarity of terminologies in terms of culture and language is of uttermost importance in comparative education studies.

(vi) Challenge related to the Dynamic Character of Education.

The character of education is often said to be dynamic because of the parameters that influence it. For example, it is impossible to find two different communities or societies or even countries which are at the same stage of development. The difference in stages of development of various countries of the world makes it almost impossible to compare two different systems of education. In regard to the time aspect, it is sometimes difficult to access the collected data on good time and this result in outdated data that is collected even before comparisons can be made. New discoveries are also made on daily basis and this influence the type of education offered in different parts of the world. In the so called first world or developed countries, new knowledge that is discovered is disseminated easily and quickly because of the development in technology. While in the so called third world or the developing countries they tend to lag behind in terms of embracing new knowledge. All these and others which influence the character of education, remains as a challenge in comparative education.

(vii) The Challenge of National Character

Just as education has its own character, so does each country have its own national character. In education theory and practice, we cannot understand the education system of a country without sufficient knowledge of the physical and social context, within which the educational system operates.

The character of a nation remains a challenge to comparative education because it influences the educational aims and content of that particular system. Many studies in many countries show that the national character is determined to a large extent by both physical and social environment. According to Michael Sadler a renown comparative education scholar said that "things outside the school often influences things inside the school". When he talks of things outside the school system he has

in mind, geographical, social-economic, historical, religion, technological and cultural environment. These aspects are the ones which shape the national character. As issues, they become important for our understanding of our educational system because they are what determine the national character which in turn influence or determine the education cum school system of country.

(viii) The challenge of Cost and Time.

Comparative studies by and large require substantial amounts of money and more real time. In conducting comparative studies, one requires relevant equipment, traveling, and assembling data from foreign sources. Obtaining the relevant equipment as well as traveling costs to collect reliable first hand data often prove to be enormous. This is why most comparative studies are done either through correspondence or through documentary analysis. This also is not assumed to be cheap. Because of these challenges and others, most universities and especially in developing countries find it increasingly difficult to allocate adequate funds for comparative research. This therefore remains a big challenge to scholars in comparative education.

Fields of study in comparative education:

https://www.semesteratsea.org/academics/global-comparative-education/

There are five fields of study in comparative education, which are as follows: -

1- Case study. 2- A comparative study. 3- Global study.

4- Study the problem. 5- Cross-sectional study.

We will explain with an explanation each of these areas, so that the student will become familiar with these areas in some detail.

First, the case study:

The case study here is intended to study the educational system in one country, and to identify its reality without making a comparison with it, and with any educational system in another country. Therefore, the study of the education system in one country cannot be considered a comparative education, because comparison means that the two parts of comparison should be available in two countries. Or more, and here lies the difference between comparative education and the study of education systems in foreign countries. However, studying the educational system in a foreign country can represent the first step in a comparative study, and the case study cannot be dispensed with, because through it the educational system is identified. In the country to be studied, the case study can be considered the first step of the comparative study.

Second: The comparative study:

It is intended to compare the educational system in two or more countries. After the researcher collects educational information and data about a particular country, as well as attempts to interpret them in the light of the political, economic, social, cultural and historical development of this country, he takes the same step for the second country concerned with the study, and with this, the two parts of the comparison are available, Then, he conducts an interview process between what he has gathered of interpreted educational information about the two countries as a preliminary step for comparison, according to steps we will discuss later.

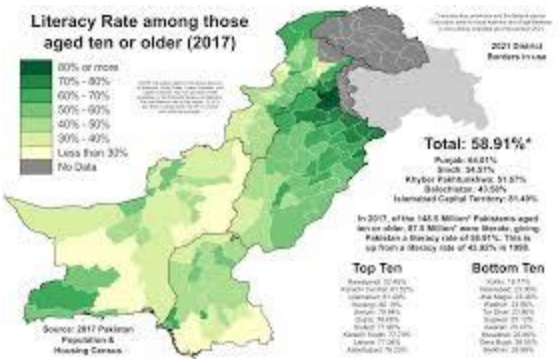
Third: The Global Study:

As the name indicates, the study focuses in this case - usually - on an educational problem facing all countries of the world. This type of study needs, by virtue of the required research, huge financial capabilities, as well as highly qualified experts. Usually, international bodies interested in education carry out such studies, for example, it is known that the problem of educational waste faces all educational systems, whether in developed countries or in developing countries, and such a

problem causes a loss of a percentage of what is spent on education, and the difference between developed and developing countries In this problem, it is a difference in the extent of the severity of the problem, not a difference in the nature of the problem itself. At a time when the size of this problem in developed countries does not exceed 10%, we find it may reach about 40% in some developing and underdeveloped countries, and the causes of the problem differ from one country to another. Although there is a similarity between the causes of the problem in developed countries and its causes in developing countries.

All these reasons called the International Bureau of Education of UNESCO to study the problem in 1969, and this study, which aimed to reduce educational waste, which is mainly represented in the problems of dropping out and re-grading throughout the years 1969-1970, was devoted to the study, which included referendums directed to various Ministries of education around the world on a report issued by the International Bureau of Education in 1971 entitled "Educational wastage is a global problem." In sum, global problems of education can only be addressed by international bodies with their appropriate material and human capabilities.

There are problems that concern a group of countries without others, for example, the problem of illiteracy is considered an urgent problem in most developing and underdeveloped countries, but it is considered a problem that is solved in developed countries. A group of researchers from one country. Usually, this type of problem is studied by the UNESCO Regional Offices.



Fourth: Study the problem:

The study of the problem by the comparative method is considered the most appropriate way to train novice researchers in the field of comparative education than to study an entire educational system in its interaction with the society in which there is a global perspective.. Such work is the culmination of many years of continuous work in the field of comparative education.

In order to study a problem in a comparative way, it is necessary to proceed according to the following steps:

1- The researcher begins by choosing an educational problem of importance in his country.

2- The researcher studies the same problem in a number of foreign educational systems with the aim of being guided by the solutions of foreign countries in circumstances similar or different with the conditions of the researcher's country.

3- The researcher must then identify and study the factors affecting the problem - the subject of the study - or what is sometimes called the infrastructure of the educational system in terms of economic, political and social factors and forces, and it is important to give each factor an appropriate weight that is equivalent to the degree of its impact.

4- If the researcher succeeds in identifying the relevant factors and affecting a particular problem, then he can predict what is likely to happen as a result of a

particular reform educational policy, or what might happen when a certain innovation is introduced in the education system.

There is a set of problems that are particularly suited to comparative treatment. Problems such as diversified education or unified education at the secondary level, the relationship of government and religious institutions to education, the status of girls in education and the transition from education based on selection to education open to all, and teacher training problems, all These problems are appropriate for comparative processing.

Before the researcher directs his attention to studying a specific problem in a particular country, he must identify the situation of the problem under study in the country concerned with the comparative study of the situation of the problem in other countries. Contrast in this problem between the Soviet Union, which It represents the state's complete control over education from one side to a country like Spain, where educational institutions are still subject to the church, then determine the situation of the problem in the United States between the two extremes to find that the United States is separated from the church from the state, while a country like England has reached a compromise between the church and the state With the state controlling education, and in the Netherlands there is the principle of a middle ground between the state and the church, with the state not controlling educational institutions.

Fifth: cross-sectional study:

It is intended to study the problems related to a particular educational stage in a number of countries, with the aim of being guided by ways of solving foreign countries' problems of a particular educational stage, as well as the efforts of the foreign country to reorganize education in the corresponding educational stage. In its quantitative organizational aspects, it is more than its connection with the content. If the researcher follows this approach, the researcher must research the

factors and forces that made a particular country adopt a specific organization in a particular educational stage, and according to the division approved by UNESCO for education, education is divided into a first level, and it means education in the primary stage. And a second level, which means education at the secondary level, and the third level means higher or university education, and there is a more detailed division in the previous stage of primary education.

In addition to these three stages, there is a fourth stage called the pre-primary stage, and this stage is divided into two parts: nurseries and kindergartens.

Comparative Education Tools:

Comparative education, like other sciences, has its tools that distinguish it from other sciences.

As we mentioned in previous pages, the comparative study should start first By identifying the conditions and conditions of the education system in a particular society, and the influences and factors behind this system ... and what are the problems that this educational system faces, and what are the solutions in another system, for this the comparative study must first begin with a study of the region, and this study of the region aims Obtaining an accurate photograph of the conditions and conditions of education and its problems in a particular society from the various aspects of this system, and the various influences on it. This study requires the student of comparative education to have three elements:

1- Mastery of the language spoken by the people of the region or the community in which he is trying to study the education system.
2- Residing for an appropriate period of time in this area or this community that provides the student with the opportunity to get to know the various aspects of the activity in it directly.
3- Constant keenness and insistence on putting forward every trace of cultural or personal bias that may appear in the student.
We will explain these three elements separately:

First, the language:

The student of comparative education must have adequate knowledge of the language of the country whose educational system he wants to study, and the importance of the language is not due to the fact that it enables the student from the primary sources of knowledge written or recorded by the original people of the country, but also because by owning the language of the country the student can communicate With the people of this country directly and easily, learn about their literature and culture, and understand their customs and traditions.
Thus, he is able to access their culture and the nature of their values, and the meanings included in their language that only those who know their language disclose, and the learner's knowledge of the language of the country whose educational system is studying increases his ability to communicate directly with the individuals responsible for setting the education policy in this country or those in charge of implementing this The policy includes administrators and teachers, and it also makes him able to communicate with the students themselves who cannot speak in anything other than their native language, in addition to the fact that talking to all of them in their own language gives them an atmosphere of reassurance, spontaneity and comfort in speaking that allows the student to obtain the data and information he wants.

It is clear that a student of comparative education cannot be familiar with all the languages of the countries whose educational systems he wants to study in a comparative study, and therefore he may have to seek the assistance of an interpreter in order to contact the education officials in a particular country, or he may need to get acquainted with the educational system through publications And books translated from the language of this country into the language of the student, but this constitutes a major obstacle to obtaining comprehensive, accurate and direct data, and a real and direct understanding of the nature of the people and culture of this country, because the translator cannot convey the feelings and feelings of the examinees, and then the translation process remains rigid. Despite this, the comparative education researcher does not completely dispense with the translator. Therefore, it is preferable for the comparative education researcher to master one or more foreign languages so that he can carry out the study and obtain correct and accurate results.

Second - Accommodation:

It is not enough for a student of comparative education to get acquainted with the educational system in a particular country by contacting publications or books about this system or about the cultural and social framework of this system. The economic, social and cultural presence in that country, then travel is a necessity for the study of comparative education, and then residence until the completion of the

study. Hence the importance of knowing the language of this country, as the language helps the researcher in the following matters:-

1. Travel and residence that allows him to obtain direct information on the conditions of education, and the conditions and conditions of the country in general.

2. Compilation of primary sources of knowledge as a result of visiting educational institutions and other institutions of interest to him.

3. Acquaintance with the nature, traditions and customs of the country.

It is important that the stay extends to an appropriate time. A short visit to the country, which extends to one or two weeks, is not sufficient, but the visit should extend to a month or several months, in proportion to the nature of the research in the period allowed for its application, and it may be better for a student to Comparative education with working in a teaching position in the country he wants to study, his long stay and direct contact with the educational system during work gives him a better opportunity to obtain the required adequate data, and direct contact with the educational situations and problems that he wants to know.

Third: Away from prejudice:

Knowledge of the language and residency in the country are not enough to obtain accurate and objective data related to the education system and its cultural and social framework. Rather, a third element must be added to it, which is that the student should be impartial to the system he is studying or the education system in his country because of his personal beliefs or concepts. He must not be influenced by his ideas What is special about his educational system or the educational ideas prevailing in a country when judging the educational ideas or conditions in the country he wants to study, but his mind must be judged before judging an educational system, whether success or failure, and that the worst enemy of the process in social and educational issues is this view Personality, if we want to

place social sciences and education on the same level as the natural sciences, we must get rid of personal judgment or subjective view of the issues discussed by these sciences, but we must expect that the evaluation processes required by the study of comparative education need - whether we like it or not. To a large degree of existing personal judgment or values specific to the student or his educational system and the philosophy behind this system, which makes the system to which he belongs a model or analogy in judging other systems, so it may seem from the It is necessary for the student to be impartial when looking at foreign educational systems, but where this is not possible - often is not possible - as a result of the student's commitment to a particular system or philosophy, the student must clarify, when evaluating a particular educational system, the type of his commitment and the ideology or viewpoint that he owes and which in Its light evaluates the educational system it studies, and the results it reaches may be unsatisfactory or meet with a little objection, but this in itself constitutes an important contribution to comparative education. Principles laid as a basis for the evaluation process, but what should not be tolerated is that he is biased in his visits or describing some conditions or circumstances, intentionally neglecting other aspects, making the image he presents incorrect, and the results he reaches inaccurate.

Comparative Education Resources:

Preparing descriptive studies for a particular educational system, on the basis of which the evaluation and comparison processes are carried out, need to obtain accurate and adequate data and information about the education systems that will be compared.

The researcher in the field of comparative education, like other researchers in the social sciences, must collect three types of material in order to be able to carry out

the comparative study, which are the primary subject, the secondary subject and the auxiliary subject.

1: **The raw material**:

This item includes all what the researcher finds of educational laws, regulations and study plans, as well as the decisions of the ministerial committees concerned with education and the provisions of constitutions related to education ... etc. The impressions that the researcher gets as a result of his field visits and interviews with officials in charge of education in the country he is visiting are considered a subject Preliminary that complements what the researcher collects from the sources of raw material, and field visits are of special importance in comparative education, as they give the researcher an idea of the reality of education, while educational laws and regulations - and committee reports may be detailed in that they give a picture of what should be, and thus be related to the ambition The state in education is more than the state's capabilities to spread and develop education, and field visits have several controls that must be followed in order for the researcher to obtain the material he wants. As it happens in some countries, if the research topic is related to primary education, the researcher must visit a government school in the city and another in the city. In and three private, as well as to visit schools for boys and others for girls if there is a separation of boys from girls in the educational stage concerned with the study. A technical secondary school, a university college, and a higher institute so that the image of the educational system in its various stages becomes clear to him, and he completes the educational material that the researcher collects through his educational visits, the material he obtains through personal interviews with education officials at their different levels, and in the event that field visits to educational institutions are not possible. In a foreign country, the researcher can take advantage of the presence of officials from the foreign country concerned with the study to conduct personal

interviews with them, and foreign films and radio stations help the researcher to be as close as possible to the educational system in which he is interested in his study.

2: **Secondary subject:**

It means books and articles published in specialized journals on the problems of education in the country under study. The researcher must be careful in choosing books and articles that deal with education problems. He must also take the writer's subjective aspect into consideration. In some countries, writers tend to promote their educational systems or justify aspects of their education The shortcomings in them, and in order for the researcher to approach objectively, he must read writers from the same country and others from foreigners about education in the country he wants to study. Russian writers, as well as American writers, taking into account the ideological differences between the writers of the two countries and the degree of bias of the writers of both countries to the Russian educational system or against it.

3: **Auxiliary material:**

It means books and magazines that are not specialized in education, which are concerned with and are exposed to some educational issues. It is worth noting that daily newspapers and weekly magazines in developed countries allocate spaces on their pages to educational issues, convinced that education is a topic of interest to all people in all its sectors, so talk about expanding the network of nurseries and kindergartens It is a topic of interest to every working mother, and the development of secondary education and technical education is one of the topics of interest to those responsible for the production and service sectors, who must have a say in the type and level of education that future producers receive.

Steps for conducting comparative research: - Biradi defines four steps for conducting comparative research, which are as follows:

A) **Description**: The description is the first step in any comparative research, and the researcher's interest in this step is to collect the educational material. And statistical tables, as well as the method of displaying the material in a tabular form to impose a kind of organization on the huge amount of information and data that the researcher collects.

b) **Interpretation**: It represents the second step of conducting comparative research. By interpretation, Bairadi means the evaluation of the educational material for one country or a group of countries in the light of the current circumstances.

The importance of this step stems from the fact that the mere description of educational systems is not considered comparative education, and that educational systems cannot be appointed in isolation from the societies in which they are located, so the social and human sciences closely related to education must be used to explain educational phenomena. And to explain the reasons that make a particular educational system as it is, this makes Beyradi describe comparative education as a branch of education in which other sciences overlap, and this shows the importance of the comparative education researcher's knowledge of more than one field of social sciences and humanities.

C) **The interview**: represents the third step, and aims to interview an educational subject with two educational systems to determine the similarities and differences in order to arrive at an assumption that helps in comparative analysis. The standard of comparison.

d) Comparison: It is considered the fourth step of the model determined by Beradi for comparative analysis, which is to do the same comparison, and it means the process of treating the material collected from two or more countries in light of the common hypothesis or criterion that was reached in the third step, with the aim of reaching objective results that prove the validity of hypothesis, and Beradi himself

acknowledges the difficulty of applying this model in a comprehensive analysis of two or more educational systems.

Quizzes:

1) What are the challenges in studying comparative education?
2) What are the fields of comparative education?

Chapter 3

STEM education in the United States of America

https://beta.nsf.gov/science-matters/what-do-data-say-about-current-state-k-12-stem

First: The emergence and development of STEM education in the United States of America:

The above factors have affected the need for STEM education in the United States of America. The PCAST report (2012) indicates the need for nearly one million STEM professionals over the next ten years (2010-2020) to maintain the historical advantage in science and technology in the country, That is, an increase in the number of students earning undergraduate degrees in STEM by 34% annually, with states graduating about 300,000 in this field annually, providing three-quarters of the target over the next decade.

The launch of the Sputnik satellite in 1957 by the Soviet Union is considered the starting point for various educational reforms in the United States of America, political, technological and scientific developments, and the establishment of the National Aeronautics and Space Agency (NASA) (NASA, 2007, 2).

The National Defense Education Act was promulgated in 1958, enrolling science and engineering students in higher education, and increasing the flow of talent in scientific and engineering professions, to restore the United States' hegemony in scientific and technological disciplines (Flattau et al., 2006, p13). New funding for education reform in the USA in science, mathematics, and industrial art education introduced new programs, and this industrial technical education became the leading voice of integrative SMET education (later to STEM), and then further expanded its programs (Sanders, 2012, p102).

The United States sought to develop STEM education, especially after students ranked 25th in mathematics and 17th in sciences out of thirty-four countries in the results of the International Program for Student Assessment (PISA), and they fell behind their peers from Singapore, Hong Kong and Japan due to the lack of interest in moving towards integrative learning. This raised concerns about the weak competition of students in the global society of the twenty-first century after completing pre-university education, and reports revealed the low demand of students to enroll in STEM majors, which affects the future availability of innovative labor to lead the knowledge-based American economy (U.S. Congress Joint Economic Committee, 2012), as well as the under-representation of minorities and women in STEM fields as a result of the widening social and economic gap for decades, and that students fail to master and interest in STEM education in the pre-university education system (PCAST, 2010, 36), and the annual growth rate in science professions And engineering did not increase during

the period from 1950-2009 by only 5.9% (National Science Foundation [NSF], 2012), and the results of the National Assessment of Educational Progress in 20 09AD that 33% of fourth graders and only 26% of eighth graders are proficient in mathematics (National Research Council, 2011, 11), and this may negatively affect the US economy in the future (Erdogan & Stuessy, 2015,p 77). The United States is able to generate the most innovative and technologically advanced economy in the world, but the education system has failed to integrate STEM content into K-12 curricula, and has created a STEM achievement gap between the United States and other industrialized nations (National Science Board, 2007, 12; PCAST, 2010; U.S. Congress Joint Economic Committee, 2012,11).

It is clear from this that the United States always seeks to occupy the global lead, especially after the results of the International Program for Student Assessment (PISA), and the retreat in front of Japan, Singapore and Hong Kong. STEM, as well as the weakness of the educational system in integrating content into K.12 curricula, and explained the gap between the United States of America and other industrialized countries and this negatively affected the economic system and led to its noticeable decline as these areas are the basis of economic growth and prosperity.

On the other hand, reports have indicated that there is a gap within the workforce among US teachers regarding the number of teachers who have the expertise to successfully integrate STEM practices into the curriculum (National Research Council, 2010, 7; National Science Board, 2007, 8; PCAST, 2010,12). and that teacher quality has been among the biggest concerns by researchers advocating the inclusion of STEM-based practices in the classroom (Gonzalez & Kenzie, 2012, 2).

That's why President Obama called in his "What's Possible for Our Children" address that "if we want our children to be massive inventors in solving tomorrow's problems, our schools must create innovation, and worryingly, China has eight times as many graduate engineers as the United States." In the United States of America, that students up to grade 12 score lower on math and science tests than most other students in the world, and that the experience of academic achievement in these areas largely depends on having effective teachers from the first step of our students into the classroom (Obama, 2008, para 20; Obama, 2012), and indicated in his speech on March 23, 2015 that science is an approach to the world and a critical means of understanding, exploration, engagement and the ability to change this world. Our youth must be equipped with the knowledge and skills to solve challenging problems and collect and evaluate evidence through STEM education (US Department of Education, 2016).

The efforts of governments are evident by providing support to encourage innovation in classrooms in science and technology schools, working to provide educational aids that support the understanding of scientific content, providing a force of cooperative work team of technicians, experts and specialists, as well as working to increase the number of teachers to fill the deficit and the shortage of weak Quality The educational product, which is the students and work on training them at a high level of quality to be able to teach these curricula and use their strategy in the best possible quality.

Second: The objectives of the entrance to STEM education in the United States of America:.

https://portal.ct.gov/sde/science/science-standards-and-resources

The United States of America seeks to achieve many goals at the local and global levels, with regard to the fields of science, technology, engineering and mathematics (STEM), to achieve competitive advantage in the twenty-first century. next :.

The strategic plan presented by the Federal STEM Education Committee clarified the national goals to be achieved (National Science Board, 2007), which were:

a) Developing teaching methods in STEM schools by training at least 100,000 new teachers by 2020 to stimulate growth and global economic competition

b) Increasing the percentage of students in STEM schools and ensuring their continuity in them until the end of the secondary stage, as well as continuing community participation in these schools in order to compete in the global economy. The next generation must have a strong knowledge of STEM, including an understanding of mathematics, science, technology, engineering and problem solving and critical thinking skills.

c) Increasing the percentage of university graduates with qualifications and experience in the field of STEM education, so that it will reach more than one million additional graduates in the coming years.

d) Increasing the proportion of students of different nationalities and women enrolled in STEM education where the participation and interest of women and

minorities in the fields of engineering and mathematics in order to fully utilize the potential of the country.

e) Supporting STEM graduates with basic skills for the future work environment, including scientific research skills, thinking skills and the use of technology to help them excel and succeed in various fields of work (Committee on STEM education, 2013)

There are four main goals for STEM schools, which are as follows:

(PCAST,2010,15-16).

1- Emphasis on citizens' ability to learn areas of integration (STEM)

Meaning that they have the scientific, technological and engineering skills and knowledge to succeed in their public and professional lives, and the associated critical thinking and problem-solving skills.

2- Building future experiences in the areas of integration (STEM)

The United States of America needs a continuous stream of the world's best STEM researchers and innovators; These researchers come up with new ideas and inventions that help create pioneering industries, thus keeping the United States at the forefront of science and technology in the twenty-first century; These scientists, engineers, and mathematicians contribute to high-tech industries, medical research centers, and engineering firms. These scientists contribute to the technological progress and economic growth of the United States, reducing poverty, disease, and hunger, and providing STEM experts with a wealth of knowledge that serves national security. It protects natural resources and attracts students and investors from around the world to the United States.

3- Building a workforce that masters the fields of integration (STEM)

The American economy needs a growing supply of workers who have the science, technology, engineering and mathematical skills in their jobs.

4- Bridging the gap between academic achievement and participation:

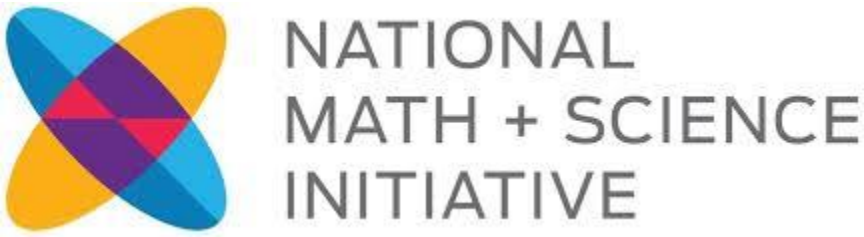
This is achieved by paying attention to the participation of minorities and women in these areas to make full use of the country's potential.

STEM schools also aim to provide students with the skills necessary to succeed as a workforce. These skills are: real-world problem solving and inquiry, creative and critical thinking; Society requires these skills to maintain competitiveness in the global economy, by teaching students in schools of integration (STEM) constructivist methods that aim to build content and apply knowledge (Kristin Turner, 2013, pp21-22).

The objectives of the integration schools (STEM) in the United States of America include the following: (Margaret Honey & et.al, 2014, 34).

* Enable students to become innovative, technological and problem solvers.

* Increasing students' skills in the twenty-first century and increasing their culture towards areas of integration (STEM).



* Enrich the community's understanding of STEM schools and their importance in building and preparing students' capacity for work and life in the twenty-first century.

* Act as a channel to connect education in schools with business to improve undergraduate students' skills and prepare for careers.

The role of the American states is to prepare teachers of schools of integration (STEM) through the initiative launched by the General Assembly and granting the state to the Association of Public and Land - Grant Universities, which is a priority for science and mathematics teachers Imperative, and this consists of an initiative of 132 universities in 45 states To graduate more than 8,000 science and mathematics teachers annually, the initiative aims to increase this number to 10,000, making it the largest STEM teacher preparation initiative in the country, and project management through the General Assembly, state grants to universities, and additional funding from the Carnegie Corporation And the National Science Foundation (Charles, 2012, 2) and its goals are as follows (The Association of Public and Land-Grant Universities, 2020):

- Increasing the number of high-quality science and mathematics teachers who are prepared through the Foundation’s initiative to prepare distinguished teachers through partnerships with schools from kindergarten to the end of high school, and developing and adopting pioneering characteristics in the preparation of science and mathematics teachers that are consistent with the objectives of the Unified Basic State Standards for Mathematics and State Standards for Mathematics Science for the next generation.

Improving areas of integration (STEM) by stimulating university leadership and collaborating with other professional and educational organizations, and in and North Carolina The Tech Math program in professional development is a close collaboration among business, colleges, and schools aimed at promoting careers in areas of integration (STEM); Tech Math provides highly professional development strategies that allow teachers to design problem-based learning units; Tech Math

integrates problem-based learning to make teachers aware of STEM opportunities for their students, and problem-based learning allows teachers to engage students with STEM-related investigations around a real-world problem. Ali the student, in a small group learning environment, with the teacher as a mentor (Rhea & et.al, 2015,1)

- Secondary school teachers in the specializations of integration (STEM) should master a broad knowledge base of the content of the fields of integration (STEM), and they should practice integrated and advanced educational models to be able to develop practical visual lessons for their students; Mathematics teachers need to understand how they teach specific principles in mathematics lessons that are relevant to other technical aspects of science testing and inferential geometry, and science teachers should be able to demonstrate advanced algebraic and geometric models for things like molecules, and to show how these particles can be represented by equations and graphs Graphics (Elliott, 2012, p29).

It is clear from this that the US government seeks to achieve goals at the local and global levels through the application of STEM fields, which is to support the capabilities of citizens in the scientific, engineering and technological fields within their communities, to provide the community with scientists, technicians, technicians, experts and specialists to raise the scientific and technological level within the American society, to support communities with manpower. The United States has also given special attention to women, girls and minorities and worked to involve them in STEM education and employment, as evidenced by the previous paragraph, the efforts made by the states The United States aims to develop STEM teacher preparation and professional development in order to provide communities with the best teachers in the fields of science and mathematics and improve their quality in all stages from kindergarten to secondary school. The Inquiry-based

learning, problem-based learning, and after presenting the goals that the United States seeks to achieve in the field of STEM in general, and the field of preparing teachers in particular, the following paragraph deals with the standards that must be met by a teacher of science and technology.

Admission policies and conditions in the College of Education:

There are a set of conditions related to admission to the College of Education, for example, Michigan State University, whether it is for admission to the university, college, or even the department, where the college depends on two types of tests, namely: a type concerned with measuring abilities and preparations, and another type concerned with measuring achievement, and these two types of tests consist of Several subparts that measure the basic skills of students such as mathematics, reading skill, and writing, and perhaps the most important tests (Scholastic Assessment Test (AST) (University of Michigan Education, 2020),

If the student wants to choose the department in which he wants to specialize within the college, he must pass the admission tests to be nominated for this department in the second year in the college, and he must also have obtained less than a “good” average in the subjects related to the required specialization. If he is able to achieve this, his acceptance automatically turns into a conditional acceptance, and the conditions for final acceptance are as follows:

All conditions for conditional admission must be met, and the student must submit an application to the Admissions Committee to examine his academic resume. (165-180. Denner, Salzmann Newsome, 2010 .)

In general, students are accepted into the College of Education after conducting admission tests, personal interviews, a certificate of good conduct, and a certificate of freedom from disease. (University of Michigan School of Education, 2020),

STEM teacher preparation programs in the United States of America:

https://serc.carleton.edu/nextgen_wa/index.html

The STEM teacher is prepared by enrolling students studying in the mathematics or science division and students in the final years studying in engineering and design programs, or technology, and computer science with a specialized division in the colleges of education so that a period of intensive field training is spent inside schools Science, engineering and technology in partnership with classroom teachers with great experience and under the supervision of professors from the faculties of education, so that students are trained through a realistic educational environment and direct interaction within the classroom, where these students are exempted from expenses and a distinguished system of free scholarships is provided. Students are encouraged to The division selects science, engineering and technology teachers, and this is done in addition to studying traditional educational courses in an integrated system of professional, cultural and cognitive preparation.

In some states, Virginia, Georgia and Florida, the STEM teacher is prepared differently so that free scholarships are provided to students and graduates from science and mathematics departments, to obtain a specialized professional diploma for this type of teacher, so that graduates of the Science and Mathematics Division are allowed with a GPA of 2.8 By joining the scholarship or graduates of other faculties of science, engineering, and technology, intensive educational content is provided along with practical field experiences within schools under the direct supervision of the faculties of education, and a great deal of time is given to micro-teaching courses. Daugherty, 2009)).

It follows that there are two trends in the United States of America. The first direction is represented by the northern states and the eastern coast states. It is preferable that the integrated preparation of the STEM teacher within the faculties

of education is the presence of a specialized degree-granting division for this type of teachers. The second direction includes sequential preparation so that it allows teachers and new graduates to join specializations They are compatible with science, engineering and technology, and enroll in a specialized diploma and obtain a temporary license to practice teaching, and allow them to professional development and complete the procedures for obtaining a professional license after undergoing periodic training organized by teacher accreditation bodies in the different states.

Integrative preparation for a STEM teacher in the United States

Although school districts working alongside colleges are increasingly involved in creating such programs, teacher education is still designed and implemented by colleges of education (2004); Milner et al., 2001; Wisniewski, 2004, Goodlad) and one of the most important preparation programs with different duration of study and the nature and amount of scientific content in the United States of America is the UT each program.

UT each:

The program is designed to be completed within four years or one year for those who already have a bachelor's degree, and through the partnership of mathematics teachers with the high school, the process of preparing students and teachers recommended by these teachers as good potential mathematics teachers is at many American universities, most notably Ohio, Florida and Texas .

Program Goals:

(American Association of Colleges for Teacher Education, 2007, pp 13-14)

The mission of the program is to provide accessible education in theory and practice in a supportive, interdisciplinary environment.

a) and maintain collaborative mechanisms for integrating professional teaching skills, including technology skills, with strong academic content from the arts and sciences.

b) Increasing the number of candidates who specialize in science and mathematics education.

c) Successfully complete the license to practice the profession.

d) Increase the number of teachers skilled in the use of technology.

e) Retaining teachers in the first three years of their careers promotes lifelong learning.

g) Reaching a high degree of competence in engineering disciplines.

h) Project-based design emphasizes participation in more knowledge-building opportunities.

i) Adapt to different environments, operate effectively in multidisciplinary environments.

From the above it is clear that the UT each program aims to benefit from the theoretical side, ideas and abstract concepts, and links them to the real real world in an integrated format that works to achieve the integrated growth of students, in various mental, psychological, and social fields through understanding the scientific content in its multidisciplinary aspects, scientific and mathematical Technology and engineering to achieve the highest levels of quality and efficiency. This program achieves sufficient attention to students during the undergraduate

and post-service stage in order to achieve comprehensive and continuous professional growth. The next paragraph deals with the most important indicators of achieving the program's goals.

Program success indicators:

(American Association of Colleges for Teacher Education, 2007, pp14-15):.

a) Graduates of the program enjoy high rates of quality in practical applications.

b) Increased achievement for all students in accordance with the partnership.

c) The teacher's retention in the first three years of the teacher's professional life.

d) Increasing the success rate in obtaining the initial government certificate or teacher licensing

e) Increase the proportion of secondary school classes taught by teachers with academic majors in the regions or a related field and demonstrate a high level of performance in the content areas.

h) Increase the percentage of primary school classes taught by teachers with academic disciplines in the arts and sciences or who demonstrate competence through a high level of performance in core academic subject areas.

i) Increasing the number of teachers trained in the field of technology.

This paragraph clarifies the indicators and evidence that show the efficiency of the program. The graduates of this program enjoy a high quality level in the applied scientific and teaching aspect, according to the companies between universities and

schools, as well as the increase in the demand for academic specializations in secondary school classes and qualified teachers and trainers in those fields, and those goals And the indicators of its achievement enhance the effectiveness of this program and the importance of its application at all levels, where the scientific human competence qualified to prepare students at all stages from kindergarten to secondary stage in preparing the teacher, and his qualification positively affects the human product, which is the student. This is what has already been achieved in this Effective university program The following paragraph deals with the elements involved in the program and how to evaluate the effectiveness of this program.

Items participating in the program:

(American Association of Colleges for Teacher Education, 2007, pp15-16).

An external assessor for UT each at the University of Austin evaluates UT3 Partnerships is a partnership between the UT Colleges (Education, Arts, Sciences, Engineering, and Pharmacy); Toledo Public Schools and Central City Catholic Schools; research teams of science and mathematics teachers, educators, scientists and mathematicians; UT centers on campus and support community partners (Toledo Zoo, Center for Science and Industry, Challenger Learning Center, and other agencies).

An Executive Board made up of community leaders from the university, schools, business, and elected officials was formed to promote UT3, provide feedback and suggestions, and develop a much-needed strategy for Northwest Ohio to advance science and math education.

From the above, it is clear how diverse the elements participating in the UTeach program are, and this positively affects the multiplicity of opinions and viewpoints, to achieve the highest efficiency, the best level, as well as the provision of material

resources, and the required technology, to prepare human cadres and train them in effective ways and use the best solutions. The following paragraph deals with degrees in university education The credit hour system granted to students for qualification in the teaching profession.

American initiatives and efforts in preparing a STEM teacher in the United States of America, pre-service stage:

https://tech.ed.gov/netp/teaching/

The US government offers many efforts and initiatives in the field of STEM teacher preparation to achieve the aforementioned goals at the local and global levels, to provide the American community with the best teachers, so those efforts became evident in the university preparation stage and the pre-university preparation stage.

Collaboration is carried out between colleges of arts and sciences, colleges of education, teacher training programs, school districts, and states to ensure the achievement of strong content knowledge for teachers of today and tomorrow through professional development programs known to raise student achievement. Pre-service teacher education programs play an important role in developing qualified teachers. It should consist of a long process full of good learning experiences and sound theoretical principles (Young et al, 2001), the most famous of which is.

a) Learning Assistant in Colorado boulder

The Learning Assistant Program in Physics is a major campus-wide effort to transform STEM education at CU Boulder and has been implemented across nine

science and mathematics departments. The undergraduate program uses courses as a mechanism to achieve four goals: (Otero & Langdon, 2010)

1. Improving the education of both K-12 students and teachers in science and mathematics through undergraduate preparation.

2. Recruiting more future science and mathematics teachers.

3- Involving the teaching staff more in teacher preparation and discipline-based educational research.

4. Transforming the cultures of science departments to the value of research-based teaching as a project activity for teachers. We demanded two other objectives of the program "to employ and prepare talented science majors for careers in teaching" and "involve the Faculty of Science in the recruitment and preparation of future teachers" (Otero & Langdon, 2010).

A program to prepare (100) thousand distinguished teachers over the next decade:

The program represents a national network to support current teachers, improve the quality of STEM teacher preparation programs, and recruit the best undergraduates for teaching positions in STEM schools. STEM teacher preparation programs to train and recruit STEM secondary school teachers (U.S Department of Education, 2016) The program is based on a problem-solving approach, charting a path To train and retain outstanding teachers, and create a network model for change of potential and potential allies to join and work together to solve major problems and challenges, by developing a strategy to invite globally ranked organizations to achieve the desired goals and provide expertise and organizational resources to attract future teachers with stronger STEM preparation and backgrounds, and help partners To provide expertise, learning and resources to build shared knowledge and expand the network, provide robust support for partners to succeed in their commitments, provide opportunities to access best practices through annual partner surveys to gather information on the network, cultivate focused learning communities to address key research and innovation opportunities, and map major challenges (such as partnering with The University of California in the success of preparing new teachers and Distinguished Students according to the Next Generation Science Standards, (U.S Department of Education, 2016

From the above, it is clear that this model focuses on attracting the best elements to work within the schools of science and technology, and even working on retaining them, by providing distinctive programs in the preparation, and the problem-solving method focuses on the challenges, using the expertise of internationally ranked organizations to choose the best elements for STEM education and the most famous Experiences and companies The University of California partnership in the success of preparing distinguished teachers.

Cultural factors and forces influencing the United States of America:

1) Geographical factors:

The United States is the third or fourth largest country in the world in terms of total area after Russia and Canada and before or after China (due to the existence of disputed areas between China and India), and includes 50 states and the Federal Capital Territory, and is located in the North American continent where it is bordered to the north by Canada and south by Mexico To the east is the Atlantic Ocean and to the west is the Pacific Ocean (for 48 states and the federal capital), while the state of Hawaii is located in the middle of the Pacific Ocean, as well as some roots and lands in the Pacific and Caribbean oceans, with an area of approximately 9.83 million km2, and its nature is mountainous in the east due to the presence of the Appalachian Mountains, and mountainous In the west there are also the Rocky Mountains, and in the center and west are the plains where agriculture is based across the Mississippi-Missouri River, and the fertile prairie plains extend to the west, and on the Atlantic coastal plain there are forests, and most types of climate have a large area and geographical diversity, it is humid continental In the north, humid subtropical in the south, tropical in southern Florida and Hawaii, semi-arid in the vast plains west of the 100° longitude, and most of Alaska has a polar climate (National Wildlife Federation, 2016).

From the above, it is clear that the United States of America enjoys large areas of land, and the evidence for this is that it includes more than 50 states, and the nature

and terrain vary in it, as there are mountains, plains, agricultural lands and water bodies, which works to vary the climate from one place to another, and there are forests on the coastal plain of the Atlantic Ocean. This positively affects the diversity of natural resources that exist within the state, and the diversity of wealth results in economic benefit if it is invested and exploited. After the natural resources, the human wealth owned by the state.

It also had a population of 323.425,550 million people as of April 25, 2016, including illegal immigrants, most of them from Mexico, China, India and the Philippines, and the basic Western culture among Americans, 82% of them live in urban areas, English is the national language, and Spanish It represents 12% of the population, and America is multicultural because it is attractive to immigrants as a result of high social mobility, and urbanization and immigration from southern and eastern Europe helped increase the industrial capacity of the country, and it owns more than (31) groups and minorities represent 34% of the population (National Wildlife Federation, 2016 World meter, 2016).

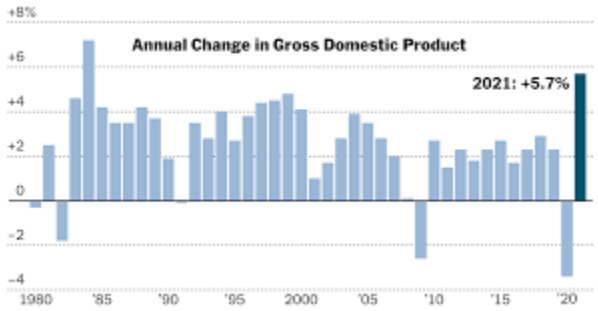
Multiethnicity works on the diversity of languages and cultures and affects different aspects, the first of which is the educational aspect, where the diversity of cultures and curricula within educational institutions, and also the previous geographical diversity affects the educational aspect because the political system is decentralized. State to state and from place to place depending on the nature and geography of the climate, and equal opportunity emphasizes social justice in the United States of America through the presence of educational institutions for STEM fields as well as all students and their individual differences as well as their preparations for learning.

2) **Political factors:**

The American system of government is characterized as a federal republic, as it is the oldest living federal constitutional republic in the world, and it is a constitutional democracy in which law and minority rights are preserved, after the American War of Independence 1775-1781 AD, which ended with the defeat of the British colonizer, the issuance of the Constitution in 1788 AD and the adoption of the Bill of Rights in 1791 AD, which prevents the restriction of personal freedoms and ensures legal protection, and the system of government depends on three powers: the executive branch, represented by the White House, and the legislative power. It is the Supreme Court and is considered a supervisory tool for separating the executive and legislative powers. American parties have developed and become strong at the end of the twentieth century, and have long ruled the two-party system, namely the Democratic Party (center-left or liberal), and the Republican Party (center-right or conservative), and supports the two-party system. That broad consensus that supports the political culture, as the values of democracy, capitalism, free enterprise, individual freedom, religious freedom and equal opportunities are the common denominator for the majority of mothers. Rikkien (Hassan Syed Ismail, D.T., 57-59), as for education is administered by state and local governments, and regulated by the US Department of Education through restrictions on federal grants (U.S. Department. of Education, 2014).

The political system is a democratic capitalist system in which various freedoms are granted to individuals, such as religious freedom and freedom of opinion, and this affects the education system in terms of flexibility and diversity, as well as making it a means for development and advancement of the American society, and affects STEM education specifically in the interest of the United States of America in projects and this type of learning is mainly based on the idea Project creation, inquiry-based learning and problem solving, which in turn is reflected in the economic aspect.

3) **Economic Factors**:



The United States has the largest and strongest mixed capitalist national economy in the world, due to the availability of advanced infrastructure, high productivity, and natural resources. According to the World Bank Group in 2016, its gross domestic product constituted about $18.04 trillion (22% of global output), and it adopts a free economy based on competition. Trade and investment, as it ranks ahead of the world in natural resources such as natural gas, petroleum, coal, uranium, renewable energy, electricity and nuclear energy, the largest importer of

goods and the third exporting country, and the largest internal market for goods, and dominates trade is the first agricultural power in the world in terms of production and export, and the New York Stock Exchange is the largest stock exchange in the world and the most influential in the financial markets in the world (Wikipedia's, 2016, 24).

It is also one of the most attractive countries for investment due to its ability to innovate and diversify its products, the availability of qualified and trained manpower (it represents the third place in terms of labor productivity per person and the fourth in terms of productivity per hour), high levels of research, investment capital, development financing and advanced infrastructure. The most important industries are: petroleum, steel, automobiles, construction machinery, aerospace, agricultural machinery, communications, chemicals, electronics, food industries, consumer goods, wood and mining. It is the leader in scientific research and technological innovation. The private sector constitutes 55.3% of the economy, and the service industry represents 67.8% of GDP And it is one of the first countries to hire and lay off employees in the event of a lack of efficiency, and the government employs about 9% of the workforce, compared to 53% in small companies, and 38% in large companies, and more than half of small companies are able to survive more than five years And that 11% of private sector jobs come from companies and projects backed by venture capital STEM fields 21% of GDP (The World Bank, 2016; Wikipedia's, 2016, 12-42).

The United States of America enjoys a high level of quality, which greatly affects the level of schools and universities specialized in the field of science, technology, engineering and mathematics, as well as preparing its teachers, as providing a high-quality educational service in the economic factor has a vital role in supporting and providing the requirements of the educational process, and the

economic aspect affects the ability Innovative and Competitive in the USA Although females make up nearly half of the jobs in the US economy, they hold about 25% of STEM jobs.

Quizzes

1) Write in brief:
   (Uteach program- efforts for preparing STEM teacher in US)

Chapter 4

Professional development for teachers

https://www.edutopia.org/topic/professional-learning

The world is racing to make system-level updates, including educational systems, to advance the ways and dimensions of the educational process, in order to keep pace with the great development the world is witnessing in several fields. The development in the field of education is evident in the field of knowledge and digital technology, and it is the responsibility of every individual Belonging to the educational field is the need to prepare itself in a way that qualifies it to keep pace with the changes of the times. The contemplator in the current conditions that the world is going through due to the Corona pandemic, in which distance learning has become an inevitable option, will understand why the topic of teacher professional development has taken a large space in contemporary educational literature; This is due to its pivotal importance in the educational process and its role in maintaining the teacher's knowledge and skills, and developing them according to .developments

1:**The concept of professional development for teachers**

The concept of professional development, and the concepts associated with it, belong to the philosophy and principles of continuous education, and self-education. Continuing education is based on the meaning of change and its .implications in the political, economic, social and cultural aspects of society

The philosophical view of professional development stems from an important postulate that affirms that change is a continuous and accelerating process, and is based on principles and foundations that focus on education as a life-long process .in a manner that achieves flexibility, integration, and functionality for education

Professional development is an indispensable requirement for teacher performance development, as there is an integrative relationship between professional development and achieving development in teacher performance. Bridging the gap that occurs as a result of the imbalance between realistic performance and the desired performance by the teacher

Professional development for teachers is defined as the totality of activities that enrich professional work and these activities include individual growth, continuing education and in-service training, in addition to team cooperation, study groups and team training, and in a broader sense all formal and informal learning experiences from teacher preparation before service to retirement and in time technology

Professional development for teachers can also be defined as a continuous and comprehensive process for all the components of the teaching profession, which leads to improving teachers' professional competencies, renewing their educational responsibilities, and providing them with all that is new in the field of knowledge, .skills and professional behaviors required by their educational work

The concept of professional development for the teacher can be crystallized by referring to a set of goals that are translated into means and activities, which the institution takes to plan and develop the future of its jobs by raising the efficiency and continuous competence of its employees to meet the current and future needs for continuous quantitative, qualitative and technical development in jobs in .accordance with international quality standards and requirements

It can also be defined as an intentional process that includes a set of planned and organized procedures in which the teacher is provided with knowledge, skills and abilities related to his work and professional responsibilities in order to improve and develop his skills and experiences throughout his professional life, with the need to result in an improvement in the learner's learning.

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The professional development of teachers consists of three components, which are as follows:

Vocational training aims to provide teachers with the necessary skills to raise their professional competence so that they can achieve the applicable standards.

- Professional education aims to modify teachers' ideas or develop their beliefs about their work and professional behavior, and to support their professional values through training courses and participation in meetings, seminars and readings.

- Professional support and aims to provide job stability and resettlement within the school for a sufficient period.

Hence, professional development for teachers is about teachers learning how to learn and transforming their knowledge into practice for the benefit of their students' growth. Professional teacher learning is a complex process that requires the cognitive and emotional involvement of teachers individually and collectively, the ability and willingness to examine each one's place in terms of convictions and beliefs and to recognize and activate appropriate alternatives for improvement or change.

Hence, professional development for teachers can be defined as: “Those ongoing activities and programs that are planned and implemented in order to build and develop the different capabilities, skills and experiences of teachers and prepare them to play the changing roles imposed by the variables of the era of knowledge flow in a more efficient and effective manner.

We conclude from the above: that professional development in its comprehensive concept is a feature of the times and has broad meanings in the fields of teacher development. Multiple templates, different styles and various strategies through which to meet the needs of teachers, enhance strengths, and address weaknesses and shortcomings.

2-Professional development goals for teachers

The objectives of professional development for teachers are related to the general objectives of the administrative and academic systems used in education, which seek to change the behavior and performance of the teacher, which is reflected in the performance of students and improve their outcomes. Hence,

professional development aims to:

-Develop and develop the knowledge and skills necessary for teachers to perform their work in an elaborate and advanced manner that keeps pace with scientific progress.

-Encouraging teachers' self-development through their participation in continuous learning programs, in addition to developing their capabilities for unconventional creative thinking and renewal.

-Helping teachers to evaluate their performance on an ongoing basis, as the successful teacher is the one who can know the strengths and weaknesses in his performance by developing the competencies and skills of assessment of all kinds.

-Encouraging teachers to develop their schools by reaching a higher standardA distinct quality that depends on quality, since education is an investment in human capital, so it needs to provide all material and human capabilities for the success of this educational process, in addition to providing schools with all their needs so that the standard of performance is quality.

- Avoiding deficiencies and shortcomings in the professional development programs for the pre-service teacher, providing feedback and giving a kind of reinforcement to teacher preparation institutions on the quality and efficiency of the graduated teacher.

- Achieving an effective partnership between the school and its local community and other institutions by training teachers and members of the external community to carry out the roles assigned to them.

- Develop the teacher's creative thinking abilities, which in turn is reflected in the student's creative thinking abilities to produce a student who is able to compete locally and globally.

3- The importance of teacher professional development:

Professional development for teachers is recognized as a key tool through which to improve teaching and thus improve student achievement. Professional development is also a way to introduce curricula and educational reforms. Teachers need the professional development of learning, collaboration and application, accompanied by school and classroom-based support, to fully integrate new behaviors into the teacher repertoire.

Hence, the importance of teacher professional development crystallizes the following values

Countries around the world are now embarking on deep reforms of their educational systems, and one of the most important changes that have been introduced has to do with a major shift in the types and nature of learning outcomes expected of students.

- The purpose of the school at the present time is not simply to provide knowledge of the subject and prepare students for their future professional careers, but rather to educate twenty-first century citizens to provide them with the ability to make responsible decisions as a result of possessing twenty-first century competencies which are the ability to think critically and creatively, communicate and collaborate with others Effectively, this necessarily requires profound transformations in curricula and educational practices, and in the way teachers teach students.

Teachers are the basis for the success of reform initiatives, as they are ultimately responsible for implementing these initiatives in the classroom. Teachers are expected to play a variety of roles in schools in the twenty-first century, and achieving these roles requires a wide range of professional and personal competencies.

For teachers to be able to provide all students with opportunities for deep and meaningful learning, and being a teacher also requires the ability to work collaboratively with others and to seek opportunities for further learning inside and outside of school.

Teachers need to possess certain personal values that allow them to act as leaders of social change, where they are able to maintain high quality educational content while adopting a social justice approach.

Many teachers need extensive guidance and support so that they can teach according to innovative principles that fit with an evolving set of competencies such as: knowledge and skills related to professional practice, collaboration, leadership, integrity, commitment to education, and social change to ensure the success of educational reforms.

Providing opportunities for professional development is essential because primary teacher education programs cannot provide them with all the skills required in the classroom. What is expected of today's teachers is to embrace lifelong learning to be able to constantly adapt to new situations, respond to the changing demands of society, and provide opportunities for professional development. Teachers usually improve their commitment and job satisfaction, which has positive effects on the educational process.

4- Reasons and reasons for the professional development of teachers:

The teacher, as a guide and facilitator of the educational process, and as an essential factor for the advancement and advancement of human knowledge, must strive towards developing his skills and abilities through professional development, which was found based on the following justifications and reasons:

- The contemporary global community, in particular, calls for the necessity of achieving comprehensive quality in education, as this will only come through the professional development of teachers.

-The increasing challenges associated with the information age at the beginning of the third millennium of the twenty-first century.

-The need for future training of teachers to be developed to meet the challenges of globalization.

-The teacher is almost the most influential component of the educational process in the learning of learners through his personal and professional growth, as the preparation he receives before service, regardless of its quality, is not sufficient to enable him to continue performing his changing roles in light of the developments that impose themselves on the components of the education system. Professional growth for teachers A critical component for implementing educational reform and development programmes.

- The most important justifications for the professional development of teachers are the renewable and evolving roles and responsibilities. The teacher is required to perform this administration with a high degree of efficiency and quality. The most important of these roles that support the professional development of teachers are the following:

The teacher as a blueprint for the teaching process: the teacher needs to transform his work into a set of interconnected organized steps, which results in saving the teacher's time and directing him to the optimal use of the resources available in the educational process and providing opportunities for the student to achieve the desired goals, and achieving interrelationship between the goals, methods and means of education and between the students and their abilities, which Leads the teacher to avoid improvisation and randomness that may surround his tasks.

The teacher as a guide to the educational process: The educational process is currently undergoing many educational developments, and this requires changing the structure of the study, and the study is a way to build relationships between students and teachers. Professional development programs to raise the professional competence of the teacher during the service.

https://www.edsys.in/benefits-professional-development-teachers/

The teacher as a determinant of educational goals: Determining educational goals is a cornerstone in the teacher's professional roles, due to the prominent position educational goals occupy in the educational process, given that educational goals are among the most influential elements in the teacher's performance and evaluation processes and have an effective impact on all aspects The educational process (planning - implementation - evaluation).

- The teacher as a user of modern teaching methods in the education process: The use of modern teaching methods receives special attention in the educational process, due to its connection with the elements of the educational system (teacher - student - curriculum) and its relation to the extent of the teacher's ability to deliver information to his students, and based on it determines the student's ability to collection.

The teacher and his role in employing activities in the educational process: The role of the teacher in employing activities in the educational process is a mainstay in judging the extent of his professional performance, and this is due to the increase in educational interest in the recent period beside educational activities, and attention to educational activities in all aspects of planning, implementation, guidance and evaluation.

The teacher and his role in employing technology in the teaching process: Employing technology in the service of the educational process inside and outside school classrooms has become a basic necessity, based on the Egyptian society's need for personalities capable of keeping pace with the changes and developments of the times, and the Egyptian society's permanent need for skilled workers in the workforce.

The teacher and his role in the diversity of assessment methods in the teaching process: The assessment aspect in education is of particular importance, through which those in charge of the educational process and students know the result of their work and show them what mistakes they have fallen into, which shows them the current level of performance of the educational process, which works to use it As a starting point towards improvement and development of the educational process, which is reflected positively on the performance of those in charge of the educational process.

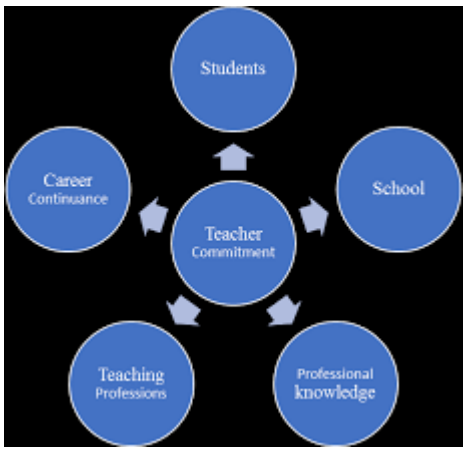
The teacher and his role in managing time during teaching: The time that the teacher spends inside the school represents a commitment between the teacher and the Ministry of Education, which gives the teacher's management of his time inside the school strength and makes it one of the basic skills that the teacher must possess, and the teacher who possesses these skills is characterized by directing Focusing attention on the basic things that he should do.

The teacher and his role in classroom management: I have recently directed the wait to classroom management due to its importance in the educational process and creating a spirit of creativity among teachers, and creating a kind of strong relationships between members of the school community.

- The teacher and his role in the participation of the school administration: Modern administrative requirements represent an important aspect in the development of

the educational process, as they are supported by new roles for the teacher to assist in the administrative work.

The teacher's commitment to professional ethics:



https://study.com/academy/lesson/code-of-ethical-conduct-in-the-teaching-profession.html

An interest in teachers' commitment to the ethics of the teaching profession from the nature of education is an ethical process, which calls for attention to the school teacher's commitment to the ethics of the profession, which includes the extent to which teachers perform their duties required of them and the extent of their commitment to the laws and regulations regulating work, behaviors, values and moral principles that teachers should abide by during the exercise of their educational role within And outside the school.

In recent years, knowledge has increased and accumulated greatly and multiplied in a way that is difficult for individuals to pursue, especially for specialists, and it has become necessary for professionals to run after everything new in their fields of work, and therefore those changes and developments necessitated the renewal of knowledge and culture, which means continuity of

training, and if training is necessary for all Professionals and specialists, it is one of the most obligatory priorities for teachers, and the reasons for professional development for teachers are as follows:

Filling the shortcomings and deficiencies in the preparation process: as a result of the presence of a large number of teachers who are educationally unqualified, the changes taking place in the curricula and the nature of the era were also noted. .

Qualifying new teachers: The professional requirements for the teaching profession, and knowledge of the teacher's roles and responsibilities towards each student, are essential premises for qualifying new teachers.

Training teachers to meet the requirements of the times: The era of globalization requires different training for teachers, unprecedented preparation, openness to all global experiences, diversity of experiences and capabilities, and the need for training to prepare teachers to deal with new technology.

The necessity of training to face the era of knowledge explosion: what the world has produced of negotiable information during the past thirty years exceeds in its quantity what the world has produced during the five thousand years of the age of human civilization. In general, so that it has become impossible for an individual to remain isolated from new information in his field of specialization or in isolation from what is happening in the world itself, and the quality of preparation does not replace the teacher with the need for more knowledge of ways to solve renewable problems, and his skill and efficiency do not remain for a long time due to developments Fast in his subject matter and teaching methods.

The role of training in raising the productivity of the teacher: Since the process of change is continuous, and knowledge accumulates on a daily basis, the process of qualifying the teacher is in need of continuous lifelong learning to enable him to

catch up with the new in the field of work and raise his productive efficiency by increasing his skills and trends.

Training as a necessity for educational renewal: The development of education is a national demand at the present time as a necessity for the future, as acquiring a set of skills is no longer sufficient for efficient performance in any profession. The individual is required to renew his knowledge, skills and trends every short period of time under what is called sustainable professional development that achieves the principle of lifelong learning.

6- Domains and dimensions of professional development for teachers:

The areas of professional development for teachers are diverse and have many dimensions, as follows:

The professional educational field: by informing him of the new in educational and psychological culture, teaching methods, curricula, assessment methods and modern learning strategies such as: self-learning, continuous learning and cooperative learning.

- Specialized academic field, by providing him with the latest developments after his graduation in order to keep pace with the new in his field of specialization.

The cultural field: by providing the teacher with a broad general culture that allows him to learn about the changes, developments and developments that surround him in his community and in the world around him.

The administrative field: through the development of the legal and administrative awareness of the teacher and his knowledge of his rights, duties, responsibilities, roles and relations with the school administration and with parents, as well as his colleagues and with his students and how to manage the class efficiently.

- Personal domain: by providing him with a set of personal characteristics of the teacher that help him to perform his work successfully.

- The social field: by instilling social skills and values through the development of teamwork skills, team spirit, cooperative learning and how to interact with colleagues and with the school administration in decision-making and school plan development.

The concept of professional development expands to include many important dimensions that are indispensable to the teacher of the twenty-first century, and the following is an explanation of this as follows:

General and pedagogical knowledge: The teacher in this era is in need of general knowledge that makes him able to understand society and specialized educational knowledge that upgrades his level of performance, represented in the following: the teacher's acquisition of some knowledge about new learning theories, knowledge of the skill of analyzing textbooks to differentiate between experiences Meaningful and non-meaningful, understanding the relationship between teaching and the cultural diversity of students in the classroom, identifying how to design meaningful experience situations in the classroom.

Teaching and learning strategies: This dimension includes the necessity for the teacher to be familiar with the renewable teaching and learning strategies in the twenty-first century, which include: the teacher's familiarity with critical thinking skills, the acquisition of knowledge and skills about collaborative learning, the teacher's knowledge and skills about how to organize the classroom and define roles.

Action Research: The first step is to review the performance of educational and educational institutions and the efforts of individuals and groups in education,

which is to carry out interrelated research on what is happening in the field. The following are the most important skills that this dimension must include: Familiarity with some procedural research skills, familiarity with the concept of survey, its tools and advantages, and acquisition of knowledge about how to evaluate performance and evaluate its levels of measurement.

Teachers' professional levels: The teacher's professional levels come as one of the important dimensions of professional development, which includes the teacher's familiarity with the following: knowledge about the concept of learning communities and the ethics of the teaching profession, skills to activate the partnership between the school and the community around it, skills for designing teaching situations based on the processes of reflection and reflection. Preparing achievement files effectively.

- Educational technology: One aspect of educational innovation in educational institutions is based on taking advantage of the potential of the technological revolution represented in educational technology, especially the computer because of its advanced capabilities that contribute to improving the quality of school performance. Which requires the necessity of qualifying the teacher and developing him professionally and continuously in the field of educational technology through his knowledge of the following: methods and skills of using computers in the teaching and learning processes, investing the computer as a source of learning and research, skills of selecting, evaluating and developing educational software, knowledge and skills about preparing educational software in Specialization subject.

Quizzes

1) Write the importance of professional development.
2) The meaning of professional development.

Chapter 5

China's Experience in Teacher Professional Development

a) Characteristics of the professional development of teachers in Chinese schools

b) 

The most important characteristics of teacher professional development in China are:

Collaborative learning refers to how teachers perform collaborative learning, such as joint lesson planning, sharing practices and resources, and collectively solving teaching problems. They are closely related in the Chinese context.

Professional competence: It refers to how teachers perform professionally during group learning practices, including their experiences, abilities, attitudes, responsibilities, and teaching behaviours, which reflects the specificity of the Chinese context. For Chinese teachers, cooperative learning activities such as joint lesson planning and group inquiry for open lessons are the main approach to teacher professional development.

Facilitative leadership: refers to the extent to which school leaders promote the professional development of teachers, such as understanding teachers' learning needs, providing training opportunities, empowering teachers, and providing external resources to enhance teachers' professional learning. Leaders in Chinese

schools do not only dedicate themselves to promoting teachers' professional learning, such as participating in Teachers' professional development activities and assistance, but also attach great importance to external resources, such as making efforts to involve local expertise and university professionals in the development of

Structural support: the school's organizational structures support the professional development of teachers. Structural support: cooperative, space and resources, funding, and facilities are closely related to the Chinese education system, which ensures organizational support such as time, place, and facilities. and a paucity of cultural barriers that indicate barriers to the development and sustainability of professional development for teachers such as school values that hinder innovation, cultures of disrespect, lack of openness, and negative interpersonal relationships

b) Teacher's professional development goals in China:

The goals of professional development for teachers are nothing but aspirations that professional development programs seek to achieve in order to effectively enhance the teacher's professional competence. They revolve around several points, including:

Enhancing the moral level of teachers, improving the quality of teaching for teachers, increasing the number of teachers, and achieving educational modernization

Ensuring teachers' suitability for 21st century skills that include a variety of competencies such as ICT, environmental awareness, critical thinking, health awareness, financial literacy and entrepreneurship, problem-solving literacy, multicultural, humanitarian, creativity and innovation, social justice and moral awareness.

Ensuring that teachers become more competent in social, political, cultural and economic aspects. This is affected by the massive integration of people due to globalization. Globalization has made the world become one village through technological progress, and thus this requires teachers to upgrade their professional skills to adapt to the global society as well as to improve classroom instruction.

Make teachers flexible, adaptable to any environment, self-motivated, responsible as well as demonstrating good communication and leadership skills

Professional development provides scope for educators to enhance students' ability to solve problems on their own, and this is important in contemporary society where students are prepared to be independent and critical thinkers. Through a teacher who fosters critical mind and self-reliance in the student to reach creativity and innovation.

Expand the experience of the individual teacher for the purposes of career development or promotion.

- Improving the job performance skills of the individual teacher (such as the induction program for the junior teacher)

Enabling teachers to gain deep knowledge of what is new in their fields of specialization, and to be aware of the latest research on teaching and learning processes.

In-service teacher training providers in China can be divided into four levels: national, regional, local, and school-level.

1- **Professional development for teachers at the national level**

The Ministry of Education offers several national programs that focus on training basic teachers and school leaders, an example of this is the most famous program “National Teacher Training Program”, which was launched in 2010 by the Ministry of Education and the Ministry of Finance with the aim of training school teachers. This includes The program is a demonstration project for primary and secondary school teacher training and a rural and central teacher training project. The central government contributed 550 million RMB annually to this program during 2010-2012

2-Professional development of teachers at the district level

The education commissions of provinces, autonomous regions and municipalities are directly governed by the central government. They have their own teacher training departments. In general, they have two departments: the District Teacher Training Center; and the Research Teaching Institute, one of their most important goals is to train teachers and to direct and manage sub-institutions for teachers, such as teacher training schools, both of which are responsible for training core teachers and school leaders in addition to helping implement the National Teacher Training Program in their regions. For city-level research teaching, training head teachers and school leaders in their districts, currently every province, autonomous region and municipality has a provincial-level institute for research teaching.

Another regional teacher training and management organization in Shanghai is the Shanghai Teacher Training Center, an in-service teacher training center At the municipal level to manage and train school leaders and principal teachers. It can be considered as a bridge between national central authorities and local education authorities, doing much of the administrative work related to teacher education and teacher guidance in schools. Some faculty members of the Shanghai Teaching Research Institute are oriented to teaching researchers in teacher training schools, meaning that their choice and professional competence greatly influence the professional development of in-service teacher teachers.

3- **Professional development for teachers at the district level**

In China, there are regional research institutes. Generally, these are at the same administrative level and function as independent organizations, as institutes for teacher education or as teacher training school for the professional development of teachers. Each subject area has at least one teaching scholar, but some subjects, such as Chinese, English, and Mathematics, have two or three scholars in some large areas. For example, in mathematics in some cities of Jiangsu Province, there are three teacher-researchers: a primary teaching researcher, a middle school teaching researcher, and a secondary teaching researcher. The teaching researcher not only needs to go to schools, observe teacher education and provide guidance and feedback, but also needs to write examination papers and make further assessment of examinations for pupils within the district. Shanghai has 17 teacher training schools: 16 district-level teacher training schools and one training school Teachers are at the county level, of which 8 teacher training schools are located in the primary city and the remaining nine are located in the suburbs. As the regular work of teacher training schools is directed and managed by the Teaching Research Institute of the Shanghai Municipal Education Commission, the teacher

training school is actually a subsidiary institution. As mentioned above, researchers working in teacher training schools are responsible for teacher training, classroom observation, giving notes, writing examination papers, and evaluating results for schools within districts. These teacher researchers are in-service teacher educators who support the professional development of school teachers in Shanghai. Most of them are chosen from schools. Therefore, they have rich scholastic experience, usually have a senior academic title, and serve as master teachers (i.e. "subject matter experts") in specific subject areas.

4- **Professional development of the teacher at the school level**

In China, school-based development for teachers is the most important. In schools, teachers collect and share teaching experiences, discuss and solve teaching challenges and problems, and find ways to facilitate student development. As the Shanghai Municipal Education Commission said, “The school should become the basis for the professional development of teachers, and make it a place for the joint growth of teachers and students, and this importance is reflected by regulations that stipulate that up to 50 percent of the required teacher training hours must come through In-School Training The Shanghai education community also recognizes that school-based training is of particular importance because it enables teachers to collaborate with each other

.In Shanghai, the idea of a Teacher Professional Development Community was used in 2011 to describe schools as a place where teachers gain professional growth By participating in various development groups with their colleagues.

Shanghai has standardized in-service teacher training since 1989 when all new teachers were required to complete at least 240 hours of training in their first five years. The requirement was raised to 360 hours in 2011. The amount of training required is related to the career ladder, as more senior teachers are required to have

more training to advance. After the first five years of teaching, all teachers must undergo at least 360 hours of in-service training every five years to improve their teaching philosophy, skills, and abilities.

Improving teachers' learning of educational theory and quality of practice.

Exchange of experiences between teachers, to enhance the professional level of teachers.

Ensuring that teachers' participation is taken into account in the planning and implementation of any professional development program as they are the main implementers of any education policy.

Improving the professional skills of teachers in schools through professional development as it brings together teachers with a unique background and experience, and enhances communication skills and teamwork behaviors in schools.

Striving to improve student management and facilitate the potential development of students. To promote balanced and sustainable school development; and creating favorable conditions for the professional development of teachers and their participation in teaching reforms, student management, construction of laboratories, staff and service support.

c) In-service teacher training in China

In 2010, the Ministry of Finance of the People's Republic of China implemented the "National Teacher Training Program" to train primary and secondary school teachers. This national teacher training program included two parts: a demonstration project for the training of primary and secondary school teachers in China, and a training project for primary and secondary school teachers in rural central and western China. From 2010 to 2012, the Ministry of Education and the Ministry of Finance provided an annual allocation of 50 million yuan Chinese (5 million euros) to finance the demonstration project for the training of primary and secondary school teachers in China. The project trained 30,000 primary and secondary teachers through the Teacher Education Foundation, and trained 900,000 teachers through distance training. In 2010, the Ministry of Education and the Ministry of Finance provided 500 million yuan (50 million euros) to support the training project for primary and secondary school teachers in central and western rural areas of China. Through full-time teacher training and remote teacher training, the government has trained many primary and secondary school teachers in rural areas of Central For senior high school teachers, the amount of training required increases to 540 hours every five years. Some training requirements vary according to teachers' roles and responsibilities. For example, new principals complete an additional 60 hours of training after assuming their leadership roles, and the content of the trainings is very rich and includes recent developments in pedagogical theory and practice, teaching skills, educational technology, social research methods and the social sciences. Sometimes special training sessions are organized for teachers who work under certain conditions, and the principal of each school is the main player responsible for teacher development. Principals actively participate in teaching and research group meetings and in classroom observation.

https://apply.china-admissions.com/d/pNBLC4DL0/

D) An overview of the cultural context in China and its impact on the development of teacher professional development

The People's Republic of China (hereinafter referred to as "China") is the world's most populous country with a population of over 1.3 billion, covering approximately 9.6 million square kilometers. Since the implementation of economic reform and opening-up policies in 1978, China has become one of the world's fastest growing major economies. With an average GDP growth rate of between 7% and 8% annually in recent decades, China has become the world's second largest economy in terms of nominal GDP.

With the largest population in the world, China has the largest education system in the world which means that it trains the largest number of teachers to take up teaching positions in schools. It is also recognized that education is the driving force behind the economic growth of any country and the sustainability of the rapid economic growth that What China experiences can depend in large part on how well its broad attitudes to teacher education are in terms of equipping its teachers with the much-needed skills for the twenty-first century.

After the founding of the People's Republic of China in 1949, the Chinese government established an independent system of regular education and with regular schools, colleges and universities at different levels as one sector within higher education, which was supported by resource-specific policies and administrative measures, and after the reform and opening up a distinctive but still educational system was built Closed, and a new strategy of "science and education to revitalize the nation" was proposed. There was a new awareness that national prosperity depends on education, in turn, on teachers, and that ordinary colleges and universities have assumed full responsibility for the development of tens of thousands of teachers. In leaving the profession in order to start businesses or enter other professions in the 1980s, to ensure adequate training of qualified teachers in primary and secondary schools, China had always had a policy of free teacher education, in the 1990s government policies for teacher education were gradually and systematically improved, but at the same time Teaching as a profession and the regular universities responsible for teacher education faced serious challenges. Along with efforts to ensure basic education for all, improve the quality of schools at all levels, and the emergence of inclusive higher education, the central government of China enacted new policies for teacher education in 1999. The goal was to create an open but diversified system of education. Teacher education, which encouraged comprehensive universities as well as other higher institutions outside the regular education sector to contribute to teacher training

After the Cultural Revolution ended in 1976, the critical issue facing China's education system was how to provide qualified teaching force to all the reopened and expanded schools. The initial work of reopening teacher training institutions (teacher colleges for secondary, primary and kindergarten teachers) took several years. However, it became clear that simply introducing new teachers into the

workforce through the traditional training system was not enough. China needed to upgrade the skills of teachers already in the classroom and rethink the way teachers are trained.

Education credits in China reflect the fact that education is a national priority. The state has focused on allocating significant resources to improving the quality of education and achieving equal opportunities in recent years. Currently, the Ministry of Education has identified four priority areas: 1) rural, remote, poor and minority areas. 2) primary education in rural areas, vocational education and pre-school education; 3) Subsidies for students from poor families. and 4) build a high-quality team of teachers.

As the Chinese government has put in place several policies to improve the quality of teachers in primary and secondary schools, especially training courses, according to the new training policy, every teacher in public primary and secondary schools must take at least 360 hours of training every five years. The courses are designed according to the professional responsibilities of teachers, and aim to improve their ethics and professional skills. In 2010, the National Teacher Training Program for Teachers in Kindergarten, Primary and Secondary Schools was implemented by the Chinese Ministry of Education and the Ministry of Finance. The program is an important measure, which is designed to improve the overall quality of teachers especially those from rural primary and secondary schools. The plan consists of several specific training programs such as the Exemplary Teacher Training Project for Teachers in Primary and Secondary Schools and the Basic Teacher Training Project for Rural Areas in Central and Western China. The central government will invest 6.4 billion yuan over the next five years to support the first round of training, which covers more than 6.5 million teachers in rural areas in the central and western part of China. Special training for

new teachers during the probationary period is designed to help them adapt to the demands of their work. Each new teacher must have completed at least 120 hours of training before starting their position

By the mid-1980s, Shanghai and the rest of China had a decentralized school administration. Decentralization was seen as a way to reorient schools that were centrally controlled and focused primarily on national examinations, as well as a response to Deng Xiaoping's declaration that education should be oriented toward the needs of modernization, the world, and the future. Transformation means that schools have levels New power to decide how and what to study. In turn, they had to reorganize themselves and redefine the responsibilities of principals and teachers. Alongside the decentralized administration came a new national approach that is completely different from the old one. Not only did the areas of learning expand to include language, literature, mathematics, natural sciences, social sciences, technology, sports and fitness, but also focused on ethics, character development, and the development of cognitive and educational skills such as problem solving, physical education, arts and culture, and social learning which means serving the community and getting to know the community, and the challenge was The challenge facing teacher development is how to transform the power of teaching to deal with this shift. A large proportion of teachers were still below current government teaching qualification requirements, but principals and teachers will now be required to run their own schools and classrooms and implement an entirely new type of system-wide curriculum. Shanghai officials admitted that this was a significant obstacle. It required a massive response, so Shanghai took the following seven major steps:

Launching a system-wide assessment of all 140,000 teachers and awarding them titles based on this assessment;

https://granite.pressbooks.pub/edu606-701/chapter/assessment/

- Create a promotion system for teachers based on the new address set.

Imposing continuous training for all teachers, requiring 240 hours over five years for most teachers and 540 hours over five years for senior secondary teachers;

- work on the basis of an employment contract, which means that unqualified teachers can be terminated;

- making principals “legally” responsible for their schools and creating a ladder/promotion system for school principals with five ranks and ten levels to align with their new levels of responsibility;

- setting new standards for teachers and school administrators so that qualification is based not only on a teaching certificate but on an assessment of whether they have met a set of aptitude tests, such as the ability to design a lesson, manage a classroom, and assess student learning;

Formalizing the teacher career ladder and adding more honorary titles to recognize outstanding teachers and identify teachers who can guide new teachers.

In-service teacher training in China has been mainly focused on theoretical lectures. For various contemporary reasons, this approach may not be effective as it is unlikely to provide a context in which teachers can put educational theories into practice. "Practical Education", a school-based research and professional learning approach that has been widely implemented in schools in China for a number of years, is an innovative model aimed at promoting the professional

development of teachers on the basis of hands-on learning. It focuses on collaborative learning, learning from experience and exploring the constructive relationship between action and thinking. This paradigm attempts to bridge the gap between theory and practice, to develop teachers' practical wisdom and to enhance teachers' professional development. In daily practice, a shifting view of learning and teaching has been prevalent around the world, with greater emphasis on social and constructive dimensions. In line with this global trend, China has taken the initiative to introduce wide-ranging curricular reform to provide quality education. Rather than simply imparting a fixed body of knowledge, the new curricula emphasize the importance of integrating 'knowledge and skills', 'process and method' as well as 'emotions, attitudes, and values'. For the success of curriculum reform, teacher professional learning is seen as critical. Sustainable curriculum reform requires empowering teachers to re-examine professional identities and develop professional expertise. Educators need to reflect on their teaching beliefs, engage with their own vision of curriculum change and develop the ability to realize them in their own practice.

Since the Chinese government launched a new round of teacher education reform in the 1990s, several major trends of development can be observed as follows:

- China's closed, independent teacher education model has been transformed into an open hybrid system. In that it accommodates the various forms of teacher education provided by professional and inclusive universities, transformation has twofold meaning in the development of teacher education. On the one hand, ordinary colleges and universities together with the active participation of inclusive universities have become the main channels for teacher preparation and development, and on the other hand, the two exclusive sub-systems of teacher

education (pre-service teacher education and in-service teacher education) are now integrated with each other. In addition, the National Network for Teacher Education and Internet-based programs have provided many open opportunities for the integration process.

- New programs and teacher qualification degrees have been developed to achieve excellence in terms of teacher quality. The Master of Education or Master of Subject Teaching (MEd), different from the academically oriented Master of Arts programs, have been established since 1996 for primary and secondary school teachers. A new master's degree is a professional degree, such as an MBA or MPA, for those who have been in the teaching profession. There are about 40 regular or comprehensive universities that offer master's programs for in-service teachers. The number of students enrolled in master's programs jumped from 1,490 in 1998 to 6,970 in 2002; More than 20,000 master's students were enrolled in regular or comprehensive universities in 2003.

- A new licensing system for the teacher profession is fully and consistent with standardized procedures, legislative requirements and measurements, and broad participation. Additional policy measures focus on establishing an accreditation system for teacher education institutions and an evaluation system to oversee their quality.

Teacher education systems have adopted new forms thanks to the development of information technologies to provide and expand training services Especially for teachers and schools in rural areas. For example, China has established an alternative form of teacher education i.e. national online networks for teacher education. The National Online Networks for Teacher Education is a nationwide, internet-based, lifelong educational project supported by regular universities for pre-service and in-service teacher training.

And China as an investment country offers valuable lessons from its development experience. As a fast-growing country that aims to develop a knowledge economy, China has launched waves of educational reform and curricula so that its schools and universities can provide the necessary human resources to support its development strategies. This endeavor has included efforts to strengthen the quality of teachers in the country and transform teacher education so that it can better serve their professional needs.

In 2010, the Ministry of Education issued the "Outlines of China's National Plan for Medium and Long-Term Education Reform and Development 2010-2020". The aim of this plan is to create a country rich in human resources. The outlines were crystallized in five main points: building a large group of good teachers, enhancing professional ethics among teachers, raising the professional efficiency of teachers, raising the social status of teachers, their salaries, and their benefits, and simplifying the administration for teachers. It can be clarified as follows:

(1) Build a large pool of good teachers, high quality education requires good teachers. The position of teachers must be improved, their rights preserved, and financial compensation must be relatively high, all to ensure that teaching is a respectable profession.

(2) Promoting professional ethics among teachers, training teachers in work ethics with the aim of enhancing their sense of responsibility as well as helping teachers learn how to take care of their students. Professional development courses for teachers will be carried out and they will be taught the ethics of self-respect and self-discipline. A full range of steps must be implemented to help promote academic work ethics and punish academic misconduct.

(3) Teachers' professional competence will be raised, teacher training will be improved to assist in teacher development and training, the system will need to be

improved Head teachers will be trained in advanced methods and financial assistance will be provided to projects Compensation will be established to help bring more teachers to rural areas All teachers will undergo training every Five years, teacher education reform will be expanded to make the education system more flexible.

(4) Raising the social status of teachers, their salaries and benefits. to attract distinguished teachers; Working, learning and living conditions will improve. Medical insurance, pension insurance and social security policies will be improved.

(5) simplify the administration for teachers, the teacher permit system will be reformulated and enforced, the policies in rural and urban schools will be gradually standardized, the conditions in schools must be favorable for teachers and school administrators to encourage innovative teaching practices. Outstanding teachers will be commended, awarded with honorary titles and recognized for their good work.

A changing view of learning and teaching was prevalent around the world, with an increased focus on social and constructive dimensions. In line with this global trend, China has taken the initiative to introduce wide-ranging curricular reform to provide quality education. Rather than simply imparting a fixed body of knowledge, the new approaches emphasize the importance of integrating "knowledge and skills," "process and method," as well as "emotions, attitudes, and values." For the success of curriculum reform, teacher professional learning is seen as critical. Sustainable curriculum reform requires empowering teachers to re-examine professional identities and develop professional expertise. Educators need to reflect on their educational beliefs, engage with their own vision of curriculum change and develop the ability to operationalize them in their own practice. Thus,

“reflective teaching” and “research-based teaching” have been strengthened and this reform is going through the following stages:

Phase One: Focus on classroom teaching and search for effective teaching practices. The objective of this phase was to find good classroom teaching practices. In this phase, teachers studied the curriculum and teaching materials carefully and extensively in order to help their students master the basic knowledge required by the curriculum.

The second stage: exploring new educational theories The aim of this stage was to motivate students to think. To achieve this, a number of meetings were organized for teachers to share their views and experiences. At the same time, teachers were encouraged to review relevant pedagogical theories from which they might gain insights into how to encourage their students to think more.

The third stage: Facing the challenge of new ideas and looking at their teaching method in light of the revised and discussed educational theories, in order to encourage them to explore new ways to improve their educational skills.

Obviously, China's focus on economic development, along with the Compulsory Education Law called for a massive educational program, which created a huge demand for teacher training. Aside from the huge number of new teachers that will be needed, the Compulsory Education Act will require extensive training for many of the current unqualified teachers. How to meet this need in the most cost-effective way was a major concern for officials in China, and then China introduced a remote training model, to train teachers, and to overcome the problem of teachers' different times and teaching loads, and called this program the name of the TV program, and this program aims To achieve a number of basic goals, including:

Providing an educational diploma for teachers who are not academically qualified (targeting teachers who did not have a degree)

equivalent degree or who lack training in certain areas)

- Raising the level of professional skills of teachers (targeting all teachers who need to raise the level of their knowledge and teaching methods).

- Conducting in-service management training for teachers to help them carry out their administrative tasks, to help the school achieve its goals.

A strong political activism in China over the past 20 years is the institutionalization of 'practices and rules' related to teacher professional development. For in-service teacher education, the most notable innovation in recent years is the National Development Plan that makes use of technology for education teachers to implement new national curriculum standards and teacher training in rural areas.

National Training Scheme: In 2009, the Ministry of Education of China launched the National Training Scheme for primary and secondary school teachers with a special focus on school teachers in rural areas. The Ministry of Education announced that the national training plan aims to promote the balanced development of education across regions and improve the quality of education in public schools. The central government recognizes the responsibilities of local educational offices, but the National Training Plan sponsored and supervised by the Ministry of Education aims to educate core teachers who will disseminate and demonstrate new knowledge and skills to other teachers, develop resources for teachers professional development, innovate professional development curricula and methods for teachers, and improve the quality of teachers in rural schools. The national training plan includes two parts, typical professional development

programs for teachers and professional development programs for teachers in rural areas of western and central China. The central government invested 500 million yuan in support of the national training plan from 2010 to 2012.

Typical teacher professional development programs adopt two approaches to in-service teacher education. Intensive, short-term, face-to-face workshops are used to educate teachers in all subjects. These workshops typically run from 10 to 15 days. The trainers in these workshops also attend intensive ten-day training on effective professional development for teachers. The second approach that typical programs use is distance education. It relies on technology including television, satellite and the Internet to train teachers in rural areas and senior secondary school teachers to implement the new curriculum. Both approaches are also adopted by teacher professional development programs for teachers in rural areas of western and central China.

Consequently, some of the prevailing cultural forces and factors in Chinese society that are compatible with the requirements of the 21st century have contributed to the professional development process for teachers. The most important of these forces and factors are the following:

- Maximizing the value of manual work, and paying attention to the accuracy of industry, as a way to raise the value of the Chinese economy among the countries of the world, and acquaintance with other cultures, and by looking at the elements

of the concept of work from the point of view of Chinese society, it is clear that it seeks to provide a distinct product commensurate with the requirements of the 21st century, so that It fascinates its users, and they seek to acquire it many times due to its quality; Also, attention is not focused on the product only, but the attention is focused on the maker of this product, as self-esteem is the key to producing a distinct product, which makes the individual feel the importance of his work, which represents the broad base upon which all elements of the concept of work are built in Yet, the achievement of development in the community is only possible through individuals' awareness of the important role they play for the advancement of Chinese society, which contributes to the production of a distinct product. This needs a competent teacher who is able to bring about change in the culture of the members of society.

The interest in consolidating the values and ethics that shaped the Chinese national culture, and made its value among the cultures of the world. These values are only on paper, but they are also interested in applying them on the ground, and making them the philosophy of life that governs their relations, not only with the children of their Chinese culture, but also with their relationship with the children of other cultures, and this will only be achieved by activating the role of the teacher in society, which requires attention to the development and professional development of teachers.

The desire to compensate for the years of delay and closure that accompanied the Cultural Revolution in China. And seeking to open up to the world through the production of distinguished products that are acceptable to the global community, which can only happen on the basis of scientific foundations provided to students at the school, to be able to produce and actually practice a scientific theory that leads to distinct outputs that help achieve excellence and the ability to compete

with global products Existing on the scene, as one of the requirements of the era of excellence. This requires qualifying teachers who are able to lead change and educate students on creativity and innovation.

Based on the foregoing, educational reform in Chinese society from that time until the present era has been concerned with achieving a number of goals:

Increasing the promotion of education By 2020, pre-school education should be primarily universal, while promoting universal nine-year compulsory education, and working to universalize educational opportunities at all levels for all.

Providing equal education for all. Education must remain oriented towards the general welfare in nature and equal access to it must be ensured. All citizens shall have access to quality education in accordance with the law, thus achieving equal educational opportunities.

- Providing quality education in various ways to improve the quality of education as a whole, while the level of modernization will rise by a margin big. The total volume of high-quality educational resources must grow steadily to meet the people's demands for quality education, which will be reflected in the graduation of a student who possesses the basic skills required by the labor market.

The modern national education system must be improved, and a basic framework for lifelong education should be established, so that everyone can be taught what they want to learn, excel in what they learn, and apply what they have learned.

- Keeping abreast of changes and developments in the global community, and transferring them to the mentality of students so that they are qualified to respond to those changes in the future.

- Strengthening the moral values of students, including respect for Chinese culture and the national language, respect for the elderly and the opinions of others,

whether from the same community or from other foreign societies, getting to know them, communicating with them, benefiting from them, and cooperating with them.

- Work on the development of all aspects of the student's personality; Spiritual, mental, physical, and moral, in order to achieve comprehensive development, build the student’s adequacy, and prepare him to assume his responsibility in leading the development of his community.

Attention to strengthening the work values of students, and appreciating the value of manual work. This will only be achieved through the teacher, which requires the great attention of the Chinese political leadership to the professional development of teachers.

Quizzes

1) Write the levels of professional development in China.
2) some of the prevailing cultural forces and factors in Chinese. explain.